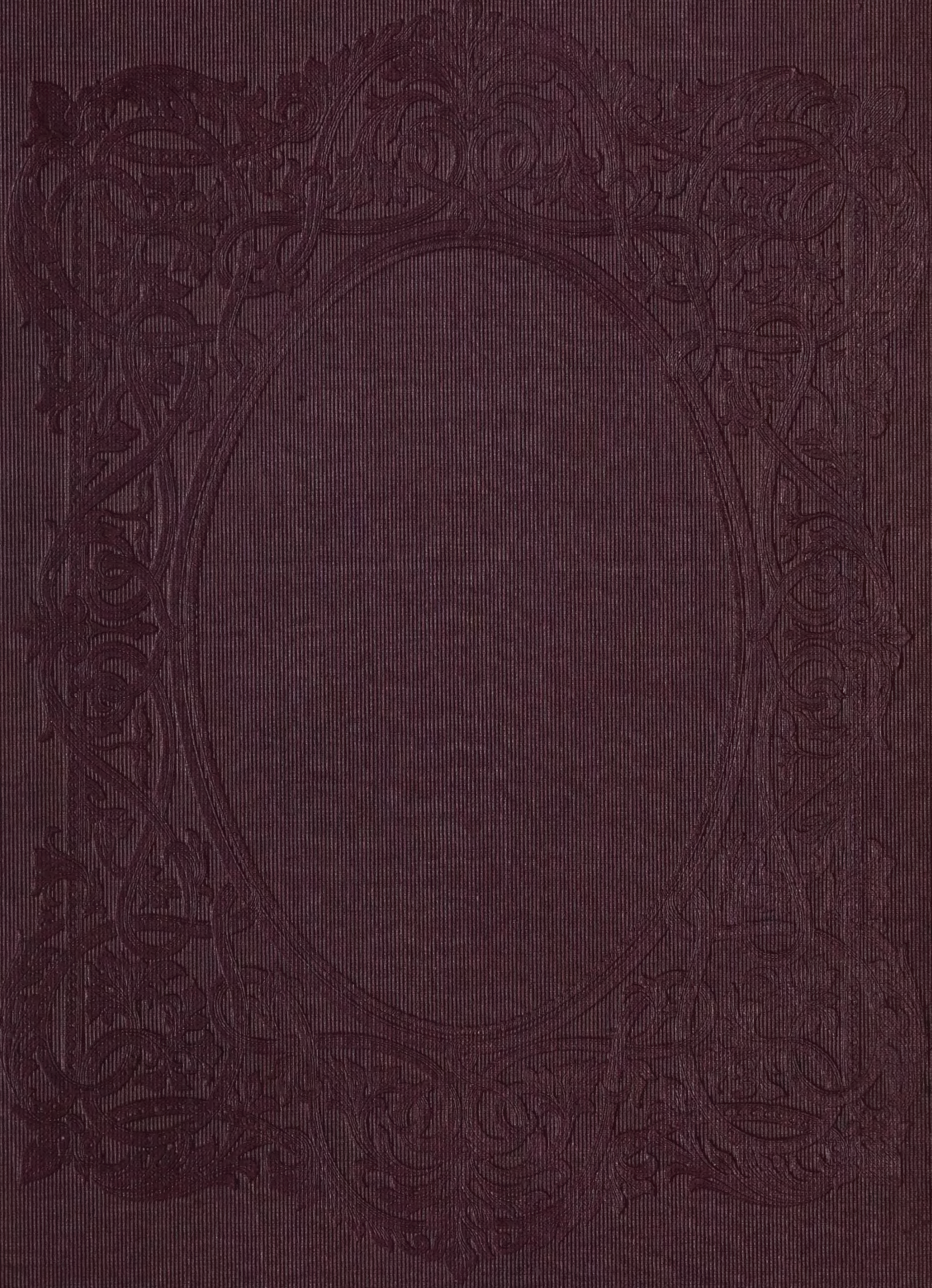

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ANTEDILUVIAN PHYTOLOGY,

ILLUSTRATED BY

A COLLECTION OF THE

FOSSIL REMAINS OF PLANTS,

PECULIAR TO THE COAL FORMATIONS

OF

GREAT BRITAIN.

SELECTED, FOR THEIR NOVELTY AND INTEREST, FROM UPWARDS OF A THOUSAND SPECIMENS
NOW IN THE POSSESSION OF THE AUTHOR,
AND SYSTEMATICALLY DESCRIBED, WITH THE VIEW OF FACILITATING THE STUDY OF
THIS IMPORTANT BRANCH OF GEOLOGY.

BY EDMUND TYRELL ARTIS, F.S.A. F.G.S.

INCLUDING REMARKS ON THE SYSTEMS OF COUNT STERNBERG, BARON SCHLOTHEIM, PROFESSOR
MARTIUS, AND MONS. BRONGNIART; ALSO COMMUNICATIONS FROM FROFESSOR BUCKLAND
AND OTHER EMINENT GEOLOGISTS.

London:
PRINTED FOR THE AUTHOR,
BY NICHOLS AND SON, PARLIAMENT STREET.
1838.

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INTRODUCTION.

The study of fossil plants has been very little cultivated in this country; indeed the progress made by us in this branch of Geology is far inferior to that by the continental Geologists; who, notwithstanding the paucity of their materials, have made considerable exertions, being aware of the great importance of the study of fossil plants, for clearing away many difficulties in the theory of Geology.

It cannot be said that our naturalists do not possess equal talent and perseverance with them; and it is certain that our quarries, our pits, our mines, and our museums, exhibit such an immense mass of materials, that we can only attribute the backward state of the study to the attention of our naturalists, not having been hitherto so immediately directed to this object, as its importance requires. Science, like every thing else, is subject to the dictates of fashion, even far beyond what the ordinary observer of things would suppose; and although no great leader of the scientific world has yet contributed to cause the study of these plants to be generally adopted; there is reason to hope that as they cannot but attract the attention of the Geological Society recently incorporated by his Majesty, so the study of them will not only assume its proper rank amongst the other objects to which the attentions of the members of that Society are devoted; but their exertions will continue to spread the study generally amongst the other members of the scientific world.

The imperfect state in which fossil plants are found, in consequence of the catastrophe of which they have been the victims is such, that the ordinary characters by which recent plants are referred to their congeners can scarcely ever, or indeed it might more justly be said, can never be detected in them. The sexual organs on which the systems of Linnæus, Jussieu, and all modern authors are founded, and also the integuments of the organs just mentioned, while in the state of flowering, have uniformly disappeared; the external parts of the seed or fruit are indeed found in the fossil state; but they are entirely insulated from the other organs.

Are leaves found, then it is almost certain that scarcely any fragment of the stem is preserved attached to them. If the external parts of a stem are found, they are more frequently bare and devoid of leaves. Can traces of the internal organization be discovered, then the external character of the stem is rarely to be traced.

In consequence of this great deficiency of the characters on which the determinations of the botanist are founded, there exists a necessity for going further than has yet been done into the structure of recent plants; their habits of growth, the cicatrices left in the stem by the leaves that fall off spontaneously, the different appearances which their fruits exhibit in the progress of their growth, must be minutely studied before any certainty can be obtained respecting the identity of the fossil and recent plants.

The exposition of the difficulties attending the study ought not to deter the student; but rather excite his diligence in order to overcome them. Being fully convinced of the importance of this study, in affording the materials on which the Geologist may found his theoretical speculations, the author began some years ago, to collect, examine, and delineate all the fossil plants that came into his hands, and to examine with care the quarries and coal-pits in the neighbourhoods, to which those fossils are peculiar.

In the course of this inquiry, the author has been greatly assisted by the works which have been published by the French and German naturalists; and he cannot but regret the depressed state of English literature in this respect, the progress of this peculiar study appearing to have been impeded in this country by our unfortunately insisting on a connexion between two such independent branches of knowledge as Philosophy and Religion.

The rigour with which this connexion is insisted upon in respect of Geological Theories is the more remarkable; because it is but as yesterday that the similar difficulty arising from the Scriptural account of the motion of the sun round the earth was abandoned; the philosophical theory of the motion of the earth round the sun, as stated by Copernicus substituted; and the scheme of Tycho Brahe to reconcile Philosophy and Scripture by taking a middle course, unnoticed even in the schools of the clergy. May it not be hoped that in a liberal and scientific age, a free scope at least will be given to philosophical enterprize; and that the Geologist will be no longer constrained, upon pain of incurring the charge of irreligion, to adopt the ancient Chaldean cosmogony further than may be consistent with more recent and careful observation.

It is not by publishing detached and unconnected delineations and descriptions of fossil plants, as they occasionally occur, that the knowledge of them can be considerably promoted. A systematic arrangement must be formed, and the first step to this is the accurate determination of the species. *Hoc opus, hic labor est.*

It will be seen in the course of this Work how easy it would be to imagine even parts of the same specimen to be different species, when they happen to be broken and dispersed. The author may confidently assert, that in at least a thousand different specimens which he has in his possession, he does not apprehend that more than a hundred different species can be recognised. Furthermore, still fewer indeed can be referred to any living species; for it is not the fern-like leaf of a plant, the palm-like cicatrix, or the cane-like joint of a stem, that will suffice to identify them with those tribes of the vegetable kingdom. The whole Anatomy of the Plant must be studied. The subject has indeed been begun by Professor Martius, in his comparison of certain fossil stems of plants with those of the living plants growing in the Brazils; but the study is as yet too new to afford certain results. Accordingly, several of that professor's opinions are at variance with those of M. Adolphe Brongniart, who has also compared the recent and fossil vegetables together on this plan. But by following up this comparison, which has been so successfully adopted by Baron Cuvier in the study of fossil animals,* similar results may be expected; and a knowledge of the extinct plants be at length attained.

The following abstract of the systems of Baron Schlotheim, Count Sternberg,

---

* Having mentioned the name of Cuvier, the author cannot refrain from observing that by Cuvier's extensive comparisons between the skeletons of recent and fossil animals, he has shewn the analogy which exists between them; that animals very similar to the present races existed in a former world, and that, even in this island, evident traces have been left of their residence here, though at a more remote period than has been imagined.

The various caverns which have been explored throughout Europe, have shewn that elephants, hippopotami, rhinoceroses, and hyenas, were natives of this part of the world; and at a period probably not far distant from the time of that desolating current which excavated the vallies and bore away the forests.

The fossil remains of some animals, however, which have been collected in the British Islands, as well as in other parts of Europe, are in all probability of postdiluvian origin, although the living animals of some species of them are no longer to be found—as those of the gigantic Irish elk, and several other species of deer, the horse, ox, boar, wolf, fox and beaver.

Of these animals, four are no longer known to exist in the British Islands, namely the Irish elk, the wolf, the boar, and the beaver.

Although we have scarcely any other evidence of the existence of the Irish elk as a postdiluvian ani-

Professor Martius, and M. Adolphe Brongniart will shew the progress of the knowledge that has been obtained of these plants.

The Baron Schlotheim, who published in 1804, the first part of a Flora der Vorwelt, followed up his researches of this kind by a catalogue of his cabinet, under the title of Die Petrefactenkunde auf ihrem jetzigen Standpunkte erläutert, published in 1820, to which two Appendixes have since been added in 1822 and 1823.

The arrangement made by the Baron, so far as regards the vegetable part of his cabinet is as follows:

His specimens are first divided into five sections; or perhaps their more proper names would be orders.

1. Dendrolithes, containing the remains of trees, which are subdivided into three subsections.

A. *Lithoxylites,* of which no characters are given, but from the specimens mentioned by him, he evidently arranges in this place the wood stone and wood opal of the mineralogists.

B. *Lithantracites.* In which the Baron places the bituminized stems and other parts of trees.

C. *Bibliolithes.* Fossil leaves, mostly of the later formations.

2. Botanolithes. Comprising those kinds of fossil plants which cannot be considered either as trees or shrubs, nor belonging to the plants of the old coal formation.

mal than the skeletons which have been found in the alluvial soils that have been formed since that catastrophe, in which they are even discovered very frequently in an upright position; yet it is easy to conceive that from its bulk and weight, it might have met with frequent accidents, in crossing lakes on the ice, or being mired in soft grounds. And an animal, which at all times was probably scarce, and very conspicuous as an object of the chase, would speedily be destroyed even by a thinly scattered population of hunter tribes.

The existence of the wolf in these islands is a matter of historical record; and that of the beaver rests partly on tradition, partly on the fact of there being a name appropriated to this species of animal in two of the languages of the country, namely the Cymric or Welch, and the Gaelic or Highland Scotch, which names are formed by derivation, and not adopted from other countries where these animals now exist.

The wild boar certainly contributed to the sports and feasts of the Romans along with the stag. In the course of the extensive researches which the author has made in the Durobrivæ, in making which he has caused numerous excavations to be made, and over a space of country nearly eight miles in circumference, he has been fortunate enough to raise the bones of various animals, particularly the tusks of the boar and the antlers of the stag.

The various discoveries which these excavations have afforded the author in respect to antiquities, are now in course of description by a publication, in parts, under the title of Roman Antiquities, or the Durobrivæ of Antonius identified in a series of plates, illustrative of the Excavated Remains of that Roman Station, in the Parish of Castor, Northamptonshire.

All the specimens belonging to the preceding sections are merely enumerated, and not distinguished by generic and trivial names, as is the case with the following.

PHYTOTYPOLITHES. Fossil plants of the stone coal formation. These the Baron divides systematically into genera and species. The genera are these six:

a. *Palmacites,* containing	fifteen species.
b. *Casuarinites,*	five.
c. *Calamites,*	ten.
d. *Filicites,*	twenty-three
e. *Lycopodiolithes,*	five.
f. *Poacites,*	four.

In the whole sixty-two species.

4. CARPOLITHES. Of which Baron Schlotheim enumerates fifteen species as present in his collection. This division is considered as a genus, as is also the next.

5. ANTHOTYPOLITHES. The cabinet contains only one species, namely the Anthotypolithes ranunculiformis.

In 1820, Gaspard Count Sternberg published in German, the first number of a work which has been translated by the Comte de Bray, under the title of "Essai d'un Expose Geognostico-Botanique de la Flore du Monde Primitif." Of this translation a second and third number have appeared in 1823 and 1824. In these successive numbers the Count has communicated the state of his knowledge as it grew up under his own hands, in consequence of his own labours and those of his friend Baron Schlotheim.

The Count's genera, as they are successively developed in his work are the following:

1. *Lepidodendron.* Stem scaly; the scales leaf-bearing, surrounding the stem spirally.

In the third number what are here called scales, are denominated scale-like cicatrices.

This genus he subdivides, in his first number, into two sub genera, but he does not notice this division in the additional species quoted in the succeeding numbers.

Lepidotae. Scales convex.
Alveolariae. Scales subconcave.

2. *Variolariae.* Stem shield bearing, or warty; shields leaf-bearing, surrounding the stem spirally.
3. *Calamitae.* Stem striated, intercepted with sutures at the articulations.
4. *Syringodendron.* Stem arborescent, in the form of pipes agglutinated together, with naked glandules surrounding the stem spirally.

In the second number he adds to these the following genera:

5. *Rhytidolepis.* Stem arborescent, streaked longitudinally with elevated wrinkles; shields surrounding the stem spirally.
6. *Flabellaria.* Leaves part stalked, divided and expanded like a fan.
7. *Schlotheimia.* Stem jointed, contracted at the articulation, verticillate.
8. *Annularia.* Leaves disposed in a whirl, inserted in a proper ring.
9. *Noeggerathia.* Stem as thick as a goose-quill; leaves alternate, approximate, reverse-ovate, half embracing the stem, pectinato-toothed at the top, the remainder of the edge uncut.
10. *Osmunda.*
11. *Asplenium.*

The Count does not give any character to these genera, but refers them to the recent forms.

12. *Rotularia.* Leaves verticillate, expanded in the form of a small wheel.

The third number of Count Sternberg's work contains the following increase of his genera:

13. *Lepidolepis.* Scale-like cicatrices truncated at their top.
14. *Thuites,* of which he gives no characters but refers to his figures.
15. *Antholites.*
16. *Carpolites.*
17. *Conites.* Fossil strobili.
18. *Sphenopteris.*
19. *Polypodiolithus.*
20. *Myriophyllites.*
21. *Phyllites.*
22. *Algacites,* which the French translator, on obtaining the opinion of Prof. Agardh, has changed into *Sargassum;* that celebrated algologist having considered it as identically the same as that genus of recent algæ.

These genera thus successively developed by the Count, may be arranged in the following order:

A. Fossil plants of unknown origin in which the stem is large and forms the only, or at least the most prominent character; including 1. *Lepidodendron*; 2. *Variolaria*; 3. *Calamites*; 4. *Syringodendron*; 5. *Rhytidolepis*; 13. *Lepidolepis*.

B. Fossil plants, of unknown origin in which the leaves form the prominent character; including 6. *Flabellaria*; 7. *Schlotheimia*; 8. *Annularia*; 9. *Næggerathia*: 12. *Rotularia*.

C. Fossil parts of unknown plants; including 15. *Antholites*; 16. *Carpolites*; 17. *Conites*.

D. Fossil plants, or parts of plants referable to living types; including 10. *Osmunda*; 11. *Asplenium*; 14. *Thuites*; 18. *Sphenopteris*; 19. *Polypodiolites*; 20. *Myriophyllites*; 22. *Algacites*.

In November 1821, Professor Martius read to the Botanical Society of Ratisbon, a paper which was afterwards published in their Memoires for 1822. This paper bore for its title, "De Plantis nonnullis Antediluvianis ope specierum inter tropicos viventium illustrandis;" in it he has referred several of the species mentioned by Baron Schlotheim and Count Sternberg, to the orders and genera of recent plants, and founded the following genera:

1. *Filicites,* analogous to the arborescent ferns.
2. *Palmacites,* analogous to the palmæ.
3. *Bambusites,* analogous to bambusia, and other arborescent grasses; these are the calamites of other authors.
4. *Yuccites,* analogous to the cuciphoræ, dracenæ, pandani, yuccæ, and velloriæ of the botanical writers.
5. *Cactites,* analogous to the cacti.
6. *Euphorbites,* analogous to the cereiform species of euphorbia.

The variolaria ficoides of Sternberg seems to Professor Martius to be analogous either to the cacaliæ or ficoideæ.

7. *Lychnophorites,* analogous to lychnophora, a genus of plants found by him in Brazil, which belonged to the order of the compositæ, and is allied to the vernoniæ of Linnæus and the pollalestæ of Humboldt.

The Professor promised at the conclusion of his paper to continue the subject, by considering the plants which occur in the brown coal formation, which he considers as of much later origin than those mentioned in his present essay, in which he has confined himself to the plants found in the black coal formation.

M. Adolphe Brongniart, the son of the very eminent mineralogist, who is at the head of the French Royal Manufactory of Porcelain at Sévres, has given the following classification of fossil plants, in his Essay "Sur la Classification et la Distribution de Vegetaux Fossiles," inserted in the "Memoires du Museum D'Histoire Naturelle," and also printed separately in quarto, Paris, 1822:

Class 1. Stems whose internal organization is recognizable.
1. **Exogenites.** Wood formed of regular concentric layers.
2. **Endogenites.** Wood composed of insulated bundles of vessels which are more numerous towards the circumference than at the centre.

Class 2. Stems whose internal organization is no longer distinct, but which are characterized by their external form.
3. **Culmites.** Stem jointed, smooth; a single impression at each articulation.[a]
4. **Calamites.** Stem jointed, regularly striated; impressions rounded, small, numerous, forming a ring round each articulation, or sometimes wanting.[b]
5. **Syringodendron.** Stem channelled, not jointed; impressions dot-like or linear, arranged in quincunx.[c]
6. **Sigillaria.** Stem channelled, not jointed; impressions in the form of disks arranged in quincunx.
7. **Clathraria.** Stem neither channelled, nor jointed; impressions in the form of rounded disks, disposed in quincunx.[d]

---

[a] These stems appear to M. Brongniart to belong to the arborescent grasses, to calamus or its allied genera.

[b] M. de Candolle suggested to M. Brongniart that these stems appear to belong to some plants of the natural order of equisetaceæ.

[c] M. Brongniart considers these remains to belong to genera which are entirely extinct.

[d] M. Brongniart shews in his paper the great agreement between these two genera, and the stems of ferns in every respect, excepting magnitude, and considers them as evidently owing their origin to plants of that natural order rather than to the palms.

8. **Sagenaria.** Stem without joints, or furrows, covered with conical rhomboidal tubercles disposed in quincunx, having at their upper extremity an impression in the form of a disk.[e]

9. **Stigmaria.** Stem without joints, or furrows; impressions rounded, distant, disposed in quincunx.[f]

10. **Lycopodites.** Leaves linear, or setaceous, without ribs, or traversed by a single rib, inserted all round the stem, or in a double row.

The author subdivides this genus into four sections, as follows:

A. Leaves narrow, lanceolate, inserted in a regular manner all round a stem having the characters of sagenaria.

B. Leaves setaceous, inserted in a double row only; stem not reticulated. These he considers as the proper lycopodites.

C. Leaves broad, without any apparent ribs, inserted irregularly all round the stem. These differ much from the rest of the genus.

D. Leaves blunt, short, closely applied to the stem.

11. **Filicites.** Frond disposed on a flat surface, symmetrical; secondary rib simple, forked, or rarely anastomosing.

These M. Brongniart further divides into five sub genera:

A. *Glossopteris.* Frond simple, not jagged, traversed by a single mid rib, without distinct secondary ribs.

B. *Sphenopteris.* Pinnules wedge shape, rounded or lobed at the extremity; ribs palmate or radiating from the base of the pinnule.

C. *Neuropteris.* Pinnules rounded, not lobed, nor adhering to the rachis by their base; ribs scarcely visible beyond the base, in general very distinct, and two forked.

D. *Pecopteris.* Frond pinnatifid; pinnules adherent by their base to the rachis, traversed by a mid rib; secondary ribs pinnate.

---

[e] The stems of this genus are referrable, in the opinion of M. Brongniart to those of plants belonging to the family of lycopodiaceæ, notwithstanding the great difference of size between them, and those of the recent plants of that natural order.

[f] These stems belong, in M. Brongniart's opinion, rather to plants of the natural order of aroideæ, than to the euphorbiaceæ, or to the palms to which they had been ascribed by other authors.

E. *Odontopteris.* Pinnules adhering to the rachis by the whole of their base; mid rib none; secondary ribs running out perpendicularly from the rachis.

12. Sphoenophyllites. Leaves verticillate, wedgeshape, truncate; ribs radiating, two forked.[g]

13. Asterophyllites. Leaves verticillate, with a single rib.[h]

14. Fucoides. Frond not symmetrical, often disposed on a flat surface; ribs none, or badly defined.

15. Phyllites. Leaves with ribs well defined, repeatedly divided, or anastomosing.[i]

16. Poacites. Leaves linear; ribs parallel.

17. Palmacites. Leaves fan shape.

Class 4. *Organs of fructification.*

Order 1. Carpolithes. Fruits or seeds.

Order 2. Antholites. Flowers.[k]

Great Britain is so fertile in the remains of the plants existing at the moment of that great catastrophe which has preserved them for our inspection, that it would appear nearly every species of fossil plants mentioned by these authors is to be found in it; although at present our knowledge of them is very limited.

This work is intended to extend these limits; and to exhibit a comprehensive illustration of these stupendous relicts of the early vegetable creation.

The progress of this inquiry has led to the formation of several new genera, and the introduction of species which were unknown before; and it is not improbable that in the course of a further investigation of these fossil plants, the author may have occasion to institute genera that will in some degree interfere with the principle on which the characters of the present genera are founded. Such observations, therefore, as ought to have been, perhaps, more properly made here, will be reserved until another volume, which is already in progress, be completed. The author will then give the outline of a System, with observations on the Fossil Plants of the Coal Formation, and on the System promulgated by Dr. Martius.

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[g] M. Brongniart is inclined to consider that these belong to some extinct genus of plants, allied, although perfectly distinct, to the recent genus marsilea.

[h] These the author thinks are the remains of an extinct genus of plants.

[i] The character here given of the ribs, necessitates these leaves to have belonged to the plants of the dicotyledon tribe; as those of the next genus poacites equally restricts them to the other great tribe of monocotyledon plants.

[k] These orders are too little known to be divided at present into genera.

The libraries and museums of the French nation, to which there is always a free access, are an enviable acquisition; and the author acknowledges the very liberal conduct of those who have the care of them. When in Paris he was particularly indebted to the kindness of Baron Cuvier, M. Champollion, M. Arago, and the Baron De Férussac.

The author cannot conclude without stating his further obligation for many valuable hints, communicated by Professor Buckland, Dr. Noehden, Mr. Robert Brown, and Mr. Samuel Frederick Gray, which were of essential service to him in the composition of his work.

E. T. A.

Milton, Northamptonshire,
1*st Sept.* 1825.

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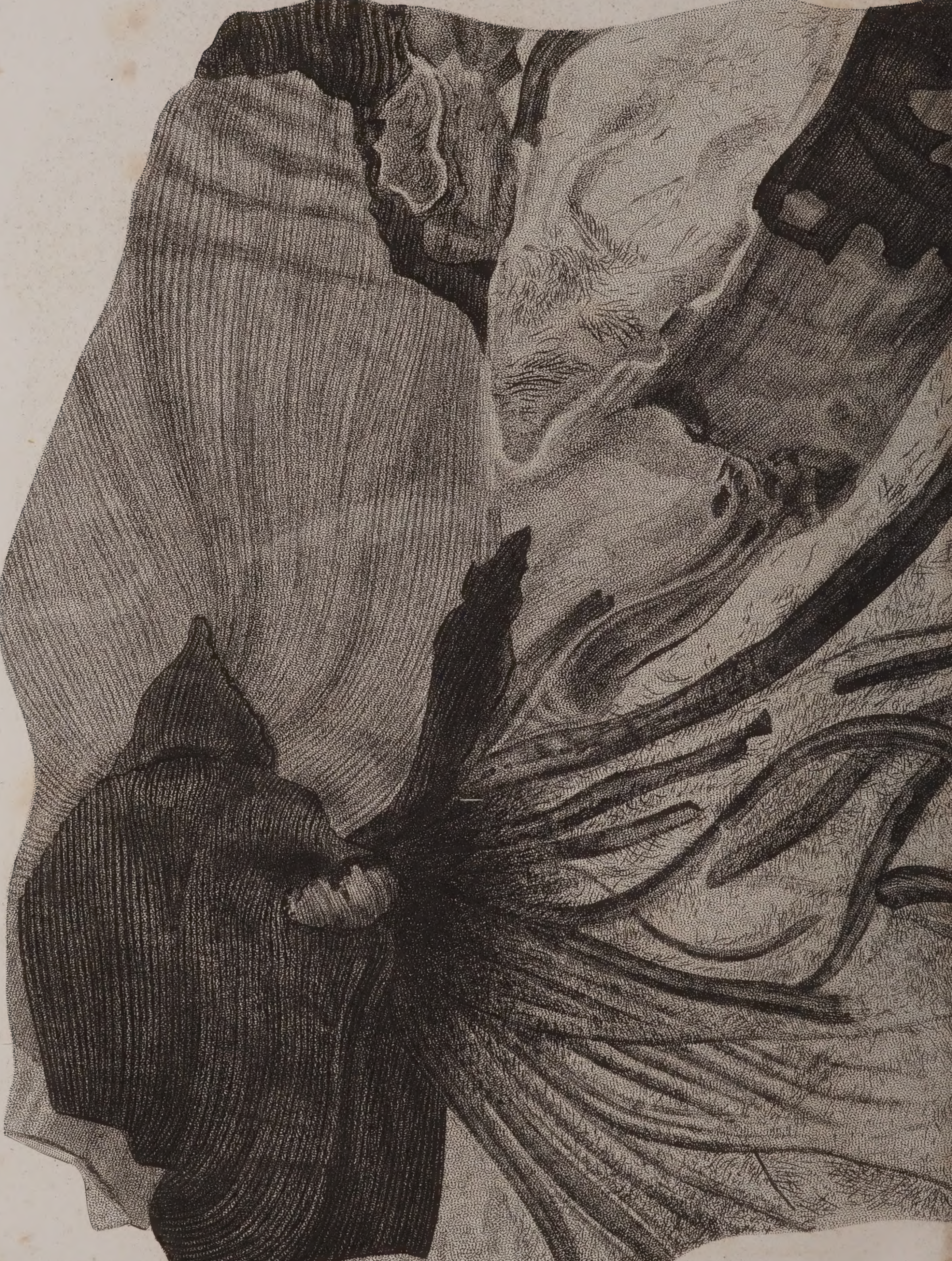

J. Curtis. Del.

Pub. by E. T. Artis. Londo

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HYDATICA PROSTRATA.

PROSTRATE HYDATICA.

Generic Character.

Stem arborescent, jointed, branched; *leaves* long, linear.

Specific Character.

HYDATICA prostrata. *Stem* jointed, slightly striated; *joints* formed with irregular sutures, from whence arise tufts of linear leaves.

Synonyms.

This fossil plant has not hitherto been found described, or figured in any work on the subject.

Description and Locality.

Stem herbaceous, cylindrical, jointed, probably horizontal when recent, the length of the specimen, of which a part only is represented in the plate, was 8 feet 5 inches; striated, branched.

Branches disposed irregularly, divided at a short distance from the stem into two smaller branches, which spread wide from each other, and are blunt at their ends.

Joints of the stem leaf-bearing.

Leaves in tufts at the joints, linear, resembling those of our common grasses, appear to have floated when in a recent state.

Found imbedded, in a compressed state, in the shale which forms the roof of the coal bed in the upper El-se-car coal-mine, near Wentworth, in the West Riding of Yorkshire, the property of Earl Fitzwilliam.

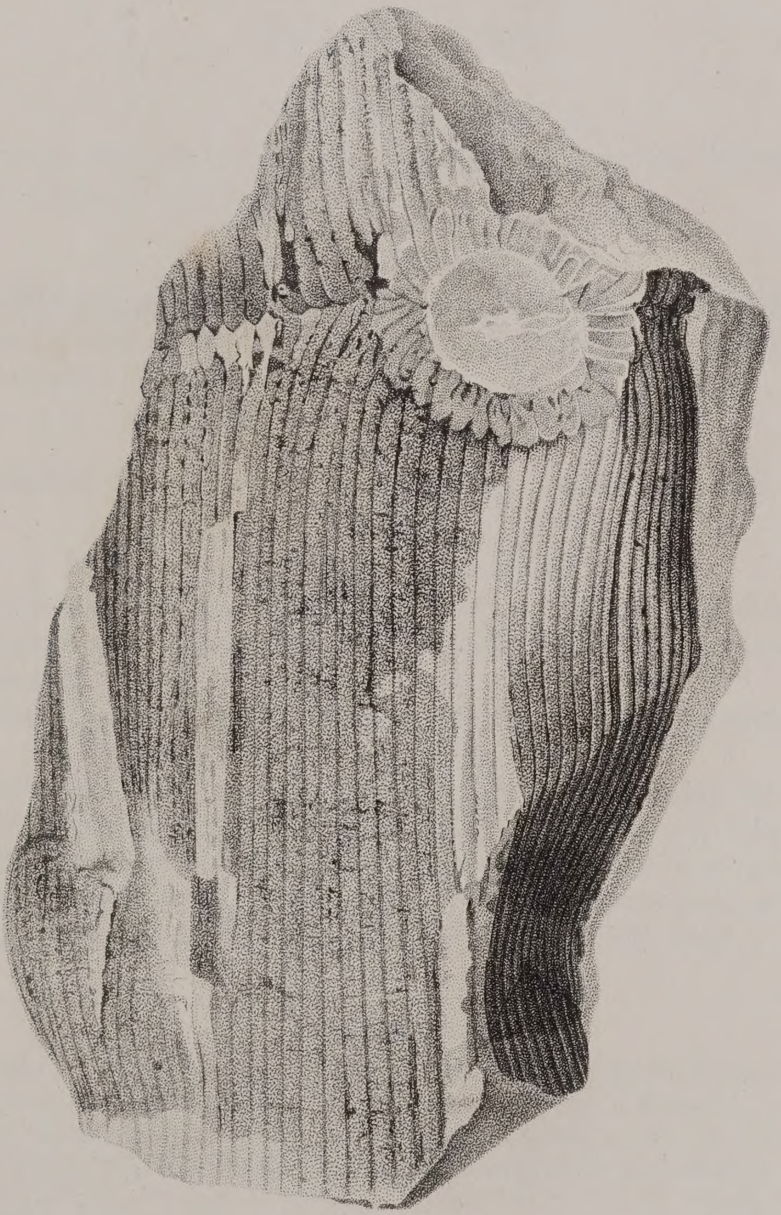
Fragments of this fossil plant may also be observed in the roofs of several chambers of that colliery from whence the coal has been extracted, and which are called by the colliers, "Old Binks."

Observations.

This singular fossil plant does not appear to belong to any genus, hitherto formed by the authors who have written on these subjects, and therefore a new genus, *hydatica,* has been formed for its reception; several other species of which will be found in this work.

These plants seem to have been a genus peculiar to fresh-water lakes; and to have been composed of a horizontal or creeping stem, sending up slender branches, which like many of our present aquatic plants were floated by their leaves.

In the arrangements of Schlotheim and Brongniart, who consider only the construction of the leaves, this plant would be a species of their genus, poacites.



J. Curtis Del.

Pub. by E. T. Artis, London 1824.

Weddell Sc.

CALAMITES RAMOSUS.

BRANCHED CALAMITE.

Generic Character.

Stem jointed, longitudinally striated; *impressions* at the articulations usually forming rings round the trunk.

Specific Character.

CALAMITES ramosus. Stem arborescent, branched; *branches* cylindrical, inserted at the articulations of the trunk, striated; *articulation* of the branches surrounded by a striated disk.

Synonyms.

This particular species has not been found mentioned in any work on the subject.

Description and Locality.

Stem (which has been found 9 feet in length) cylindrical, jointed, striated; joints longer than broad, articulations very distinct, branches slightly striated, inserted at the articulation.

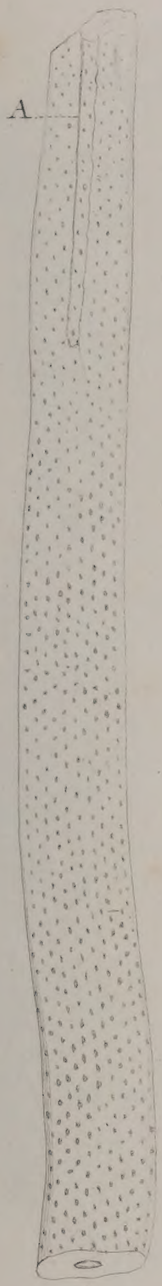
Articulations of the branch hemispherically depressed, surrounded by a striated circular disk.

Found imbedded both horizontally and vertically, in sandstone, in Lea-brook quarry, near Wentworth, from whence the specimen figured was taken, and where it occurred only five feet from the surface. This plant has also been found in El-se-car new colliery, of a great length, and on which the commencement of several branches was evident; in this place the depth at which it is found is 250 feet?

Observations.

M. Schlotheim, in his Petrefactenkunde, p. 400, No. 5 and 6, has mentioned two very similar species. And the Count Sternberg has given a figure of another similar species in his Essai d'un Exposé géognostico-botanique de la Flore du Monde primitif, part 2, plate 17, f. 2, under the name of calamites nodosus, in which the circular border round the socket receiving the branch is by no means so distinct, as in the species here figured, although there can be scarcely any doubt but that the Count's figure is that of an analogous species.

Dr. Martius has referred these arborescent plants to bambusia; but M. Adolphe Brongniart, in the Memoires du Museum d'Histoire Naturelle, controverts this opinion, and considers these fossil plants are referrable, rather to the equiseta, than to the bambusia, and other arborescent grasses.



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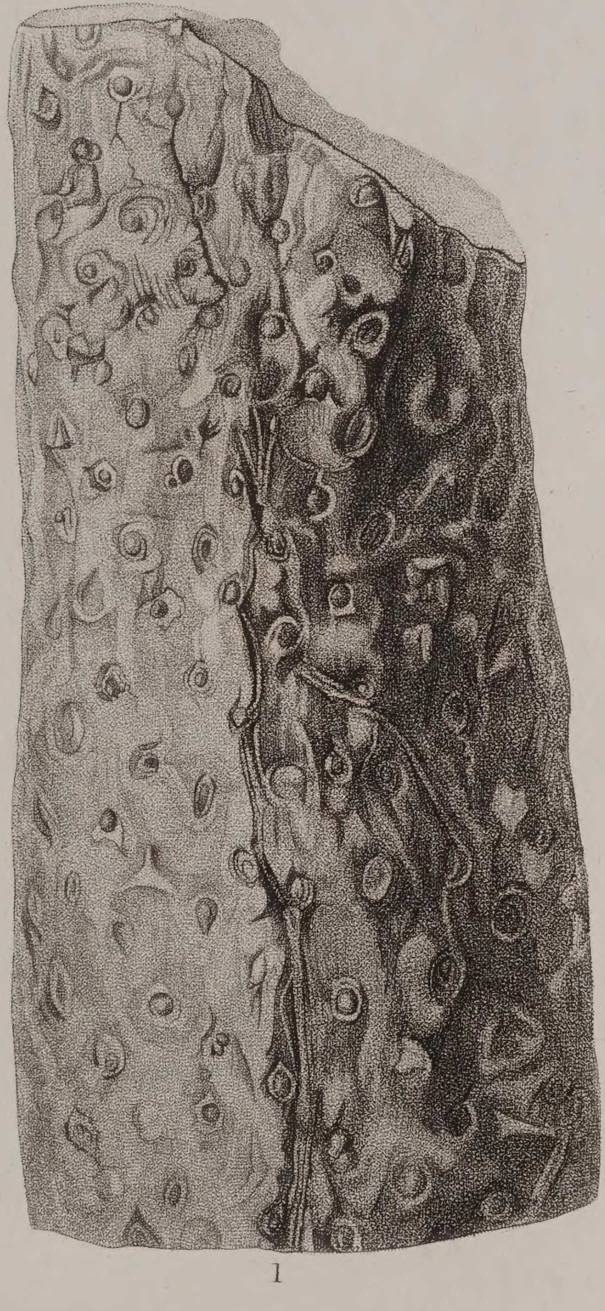

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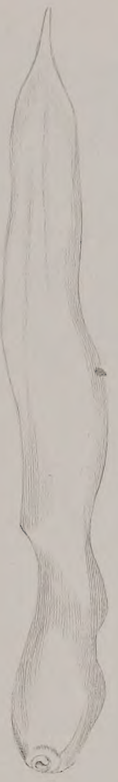

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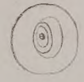

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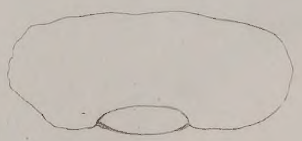

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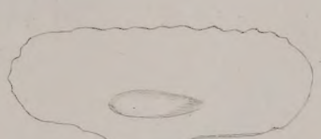

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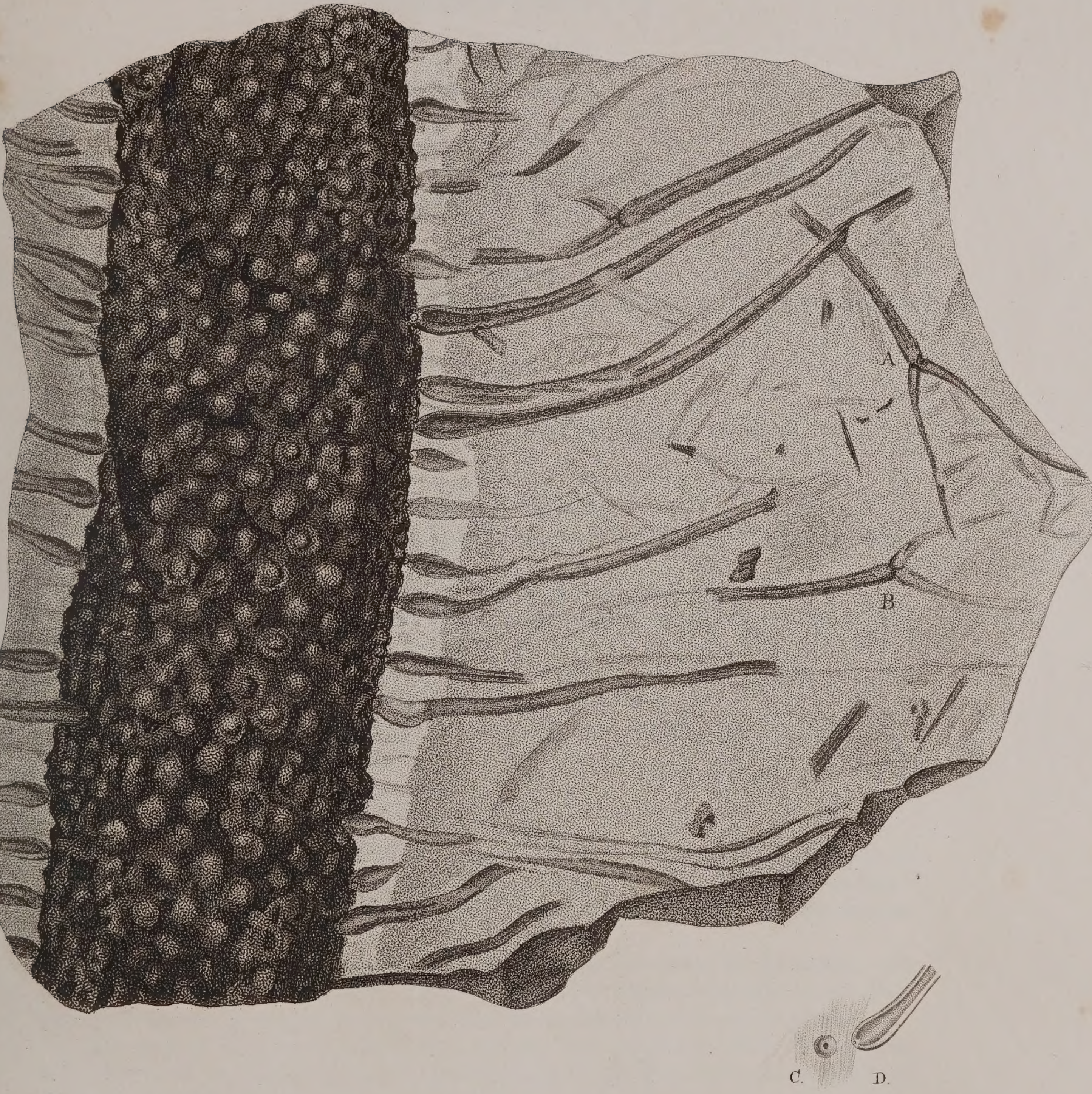
J. Curtis Del.

Pub. by E. T. Artis London 1824.

Weddell Sc.

III.



J. Curtis Del.

Pub. by. E.T. Artis. London. 1824

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FICOIDITES FURCATUS.

FORKED FICOIDITE.

Generic Character.

Stem with cicatrices; *cicatrices* distant, depressed, having a tubercle in the centre surrounded by a hollow; *tubercles* bearing leaves or spines.

Specific Character.

FICOIDITES furcatus. Cicatrices approximate, nearly of equal size; *spines* long, linear, forked.

Synonyms.

This species of fossil plants has not been found described in any work.

Description and Locality.

Stem of nearly equal thickness throughout, rather closely covered with cicatrices, arranged spirally.

Cicatrices formed of slightly prominent tubercles surrounded by a hollow.

Tubercles pierced in the centre with a single gland, connecting the spine with the stem.

Spines, cylindrical? enlarged at the base, forked? *forks* also enlarged at the base so as to produce a considerable divarication in their direction.

Found imbedded in the shale of the El-se-car new colliery, near Wentworth, in a horizontal and compressed state.

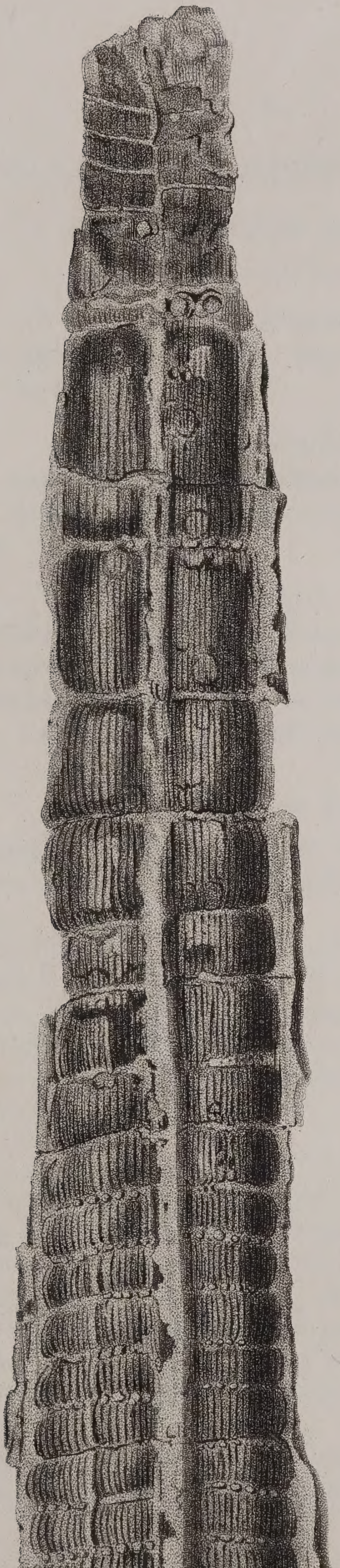
Observations.

The specimen figured in the plate is part of a very well preserved individual of this species; the stem is five feet seven inches in length, and three inches in diameter: some of the spines are one foot eight inches long. No other specimen has been as yet discovered.

Upon the principles laid down by Dr. Martius, in his paper lately quoted, this species bears indications of being allied to the recent tribes of *cacaliæ* or *ficoideæ,* and therefore this genus has been established to receive this, and similar plants.

The fork of the spine is shown at A and B. The hollow in which the tubercle is exhibited of its natural size at C, and the base of the spine with the mode of its insertion is clearly shown at D.

IV.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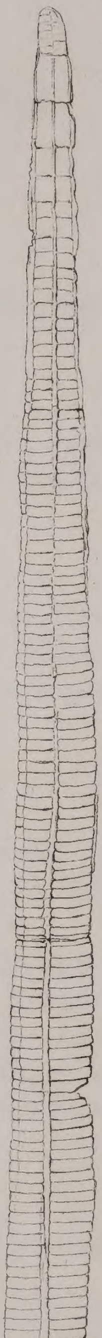
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J. Curtis Del.

Pub. by E. T. Artis, London, 1824.

Weddell Sc.

CALAMITES APPROXIMATUS.

SHORT-JOINTED CALAMITE.

Generic Character.

Stem jointed, longitudinally striated; *impressions* at the articulations usually forming rings round the trunk.

Specific Character.

CALAMITES approximatus. *Stem* arborescent, jointed; *joints* very short, intercepted by distinct articulations, with small compressed tubercles, forming a studded ring round the trunk.

Synonyms.

Calamites approximatus. *Schlotheim,* Petrefactenkunde, p. 399.

Calamites interruptus. *Schlotheim,* Petrefactenkunde, p. 400. tab. 20, f. 2.

Calamites approximatus, caudice arboreo, suturis etiam in maximis exemplaribus valde approximatis. *Count Sternberg,* Essai, part 2, p. 36.

Description and Locality.

Stem simple, straight, sometimes attaining five feet in length, jointed, striated.

Articulations very distinct, close (being generally about one-fifth of the diameter apart), tuberculated.

Tubercles of the articulations numerous, small, circular, flattish at top.

Found imbedded horizontally in the soft sandstone at the bottom of the rock in Hober Quarry near Wentworth. It has also been found in other parts of Yorkshire, as also in the bishoprick of Durham, the county of Northumberland near Newcastle, and as it appears from the works of the authors which have been cited, in various parts of the continent.

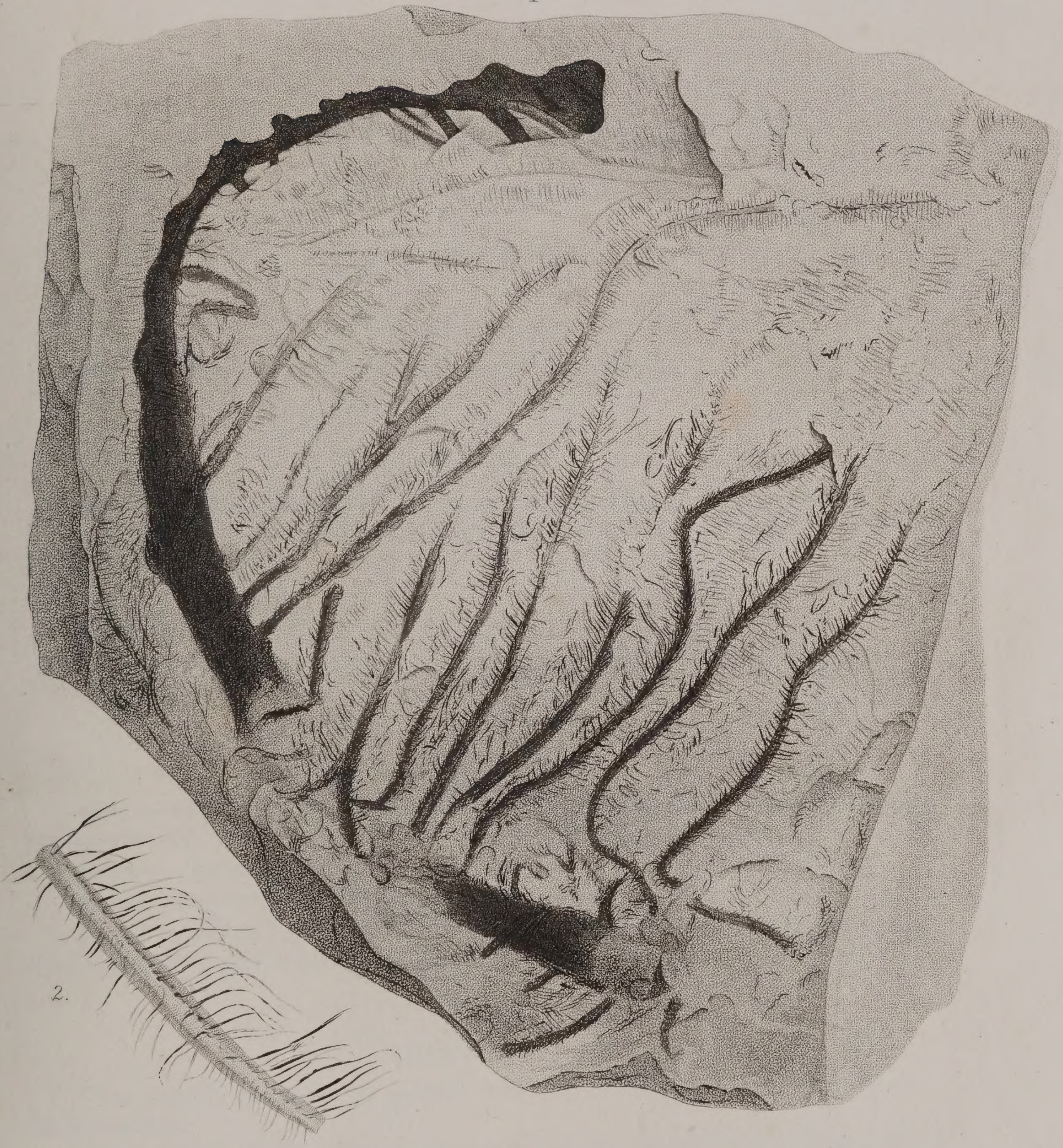
Observations.

The first figure represents a portion of the upper part of the trunk of the natural size, and terminating at top in a sharp compressed point.

The second figure, in outline only, exhibits, on a reduced scale, the proportionate sizes of the upper and lower extremity of the trunk.

The tubercular studs or warts, which are probably the cicatrices of fallen leaves, rise directly from the articulation itself, and not from the lower termination of the striæ, as they do in the species named Calamites decoratus, a figure of which is given in the 24th plate.

This species, like most of those placed in this genus by various authors, is referable to the proposed genus bambusites of Dr. Martius.



J. Curtis Del.   Pub. by E. T. Artis, London, 1824.   Weddell Sc.

5

HYDATICA COLUMNARIS.

COLUMNAR HYDATICA.

Generic Character.

Stem arborescent, jointed, branched; *leaves* long, linear.

Specific Character.

HYDATICA columnaris. *Stem* branched all the way up, ending in a club-like head; *branches* alternate, simple, covered with leaves; *leaves* hair-like, parallel, two-ranked.

Synonyms.

It has not yet been found figured or described in any work hitherto published.

Description and Locality.

Stem round, upright, branched all the way up, terminated by an enlarged head, ending obtusely.

Branches numerous, round.

Leaves numerous, hair-like, two-rowed.

Found imbedded horizontally in the black micaceous shale which covers the thick coal in the upper El-se-car colliery, near Wentworth.

Observations.

This plant is decidedly an aquatic, and very distinct from the *fucoides* of M. Brongniart.

The examination of several specimens of this species, besides those figured in the plate, shows evidently that this is very distinct from all others of the same genus.

The first figure represents the plant of the natural size in its matrix of shale; and the second figure a magnified branch, showing the two lines in which the leaves are inserted.

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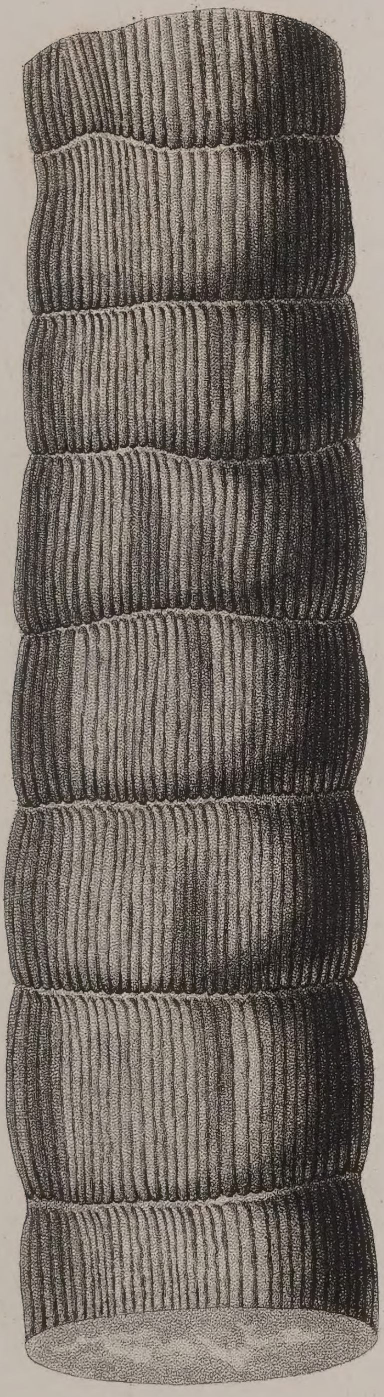

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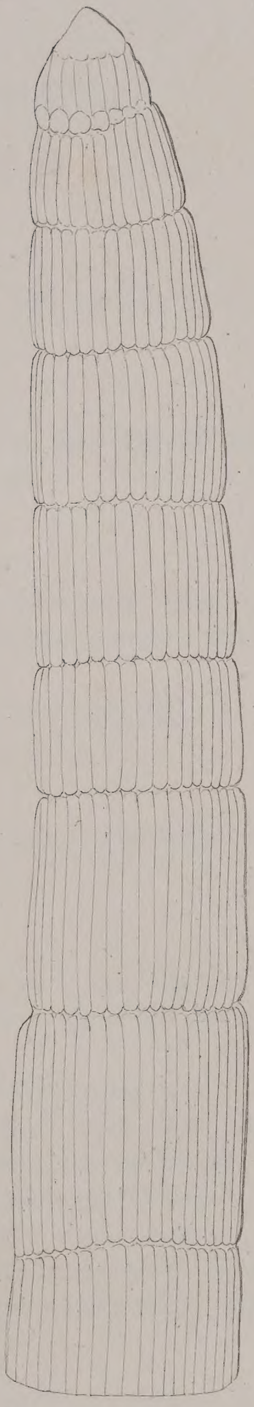


J. Curtis Del. Pub. by E. T. Artis, London 1824. Weddell Sc.

CALAMITES PSEUDO-BAMBUSIA.

FALSE-BAMBOO CALAMITE.

Generic Character.

Stem jointed, longitudinally striated; *impressions* at the articulations usually forming rings round the trunk.

Specific Character.

CALAMITES pseudo-bambusia. Articulations more or less distant according to the size of the plant; *striæ* intercepted at the articulations.

Synonyms.

Calamites pseudo-bambusia. Caudex arboreus, lineis parallelis striatus, ad internodia secundum magnitudinem plantæ plus minus distantia, suturis interceptus. *Sternberg.* Essai, part 1, p. 26, tab. 13, f. 3.

Phytolithus (arundineus) graminis? *Martin.* Petref. Derb. pl. 25.

Description and Locality.

Stem arborescent, sometimes five feet in length, simple, cylindrical, striated, jointed.

Articulations contracted, very distinct.

Striæ of the stem cut off at each articulation.

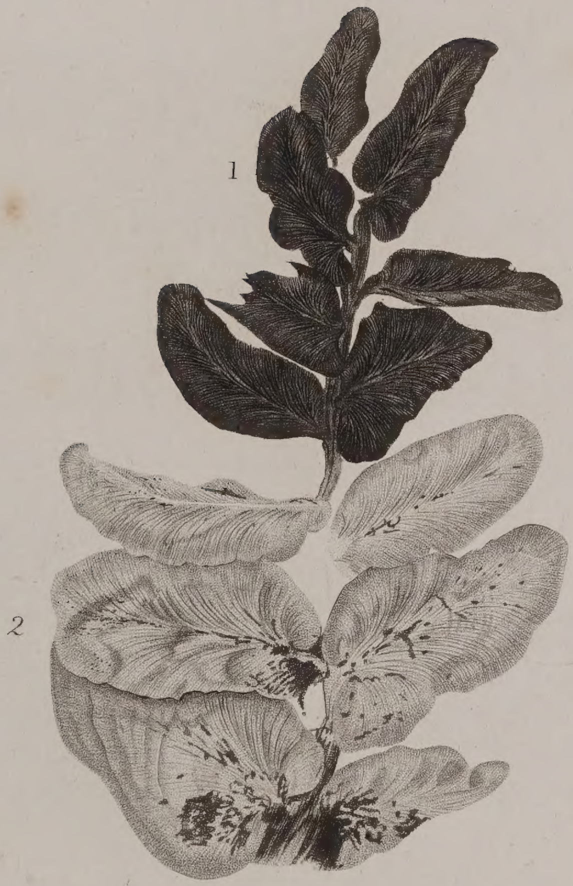
Found imbedded, in the clay which fills the fissures of a very fine grit stone, called by the workmen 'Delf,' which forms a stratum from 20 to 25 feet thick, in the quarry at Leabrook, near Wentworth in Yorkshire.

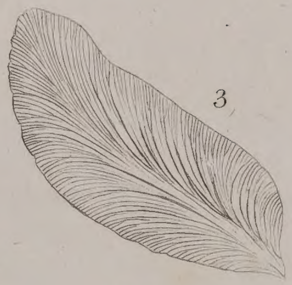
Immediately under this stratum there is a thin bed of very good coal; and at a considerable depth below this bed there is a second bed of coal eight feet thick, which is covered in particular places with immense masses of fossil plants. In the quarry at Leabrook, the space between the two beds of coal is partly occupied by a strong grit stone, and consequently there are no fossil plants; but in other parts the eight feet-coal is covered with a bed of shale, in which great numbers of these plants are found. Indeed it is of very common occurrence throughout the whole of the coal formations of England.

Observations.

The first figure represents part of the middle of a stem of this plant; and the second, the upper termination of the stem, to show its gradual diminution, and ending in a point.

This plant is also referrable to the bambusites of Dr. Martius.





J. Curtis Del.   Pub. by E. T. Artis London 1824.   Weddell Sc

FILICITES OSMUNDÆ.

OSMUND FILICITE.

Generic Character.

Leaf, or, *frond,* forming a flat surface, the two sides of which are symmetric; *secondary rib* simple or forked.

Specific Character.

FILICITES osmundæ. Leaflets broad, rather falcate; *rib* single, branched, branches divergent, forked.

Synonyms.

This fossil plant has not as yet been found described, or figured in any work.

Description and Locality.

Stipes (wanting in the specimen) bipinnate.

Pinnæ six-paired? with an odd one; lower leaflets opposite, upper leaflets alternate.

Leaflets lanceolate, one-eared at the base, tip turned to one side; *rib* single branched; branches divergent, forked as shewn in fig. 3.

Found in shale in El-se-car new colliery; but for the sake of exhibiting the plant in the most perfect manner, the matrix has not been figured. The leaflets are often found detached, and in many instances they are so little altered, and so slightly attached to their matrix, that they may be separated by laying hold of them with a small pair of forceps, or by cementing them to paper by means of isinglass. When separated, they leave an impression in the shale, as is represented at 2, in respect to the three lower pairs of leaflets, which have been raised by the last mentioned means.

Detached leaflets of this filicite are often found in nodules of ironstone.

Observations.

Count Sternberg has figured a fossil plant of this kind from the coal mines of Schaltzlar; but the shape of the leaf, which is neither eared at the base, nor subfalcate at the tip, shows that it is not of the same species.

He has figured another communicated to him by Professor Buckland, and found in the coal mines at Radstock near Bath, which appears to come nearer to the present specimen, but still there is such a difference in the shape of the leaflets as to justify their being considered, at least for the present, as of different species.

VIII.

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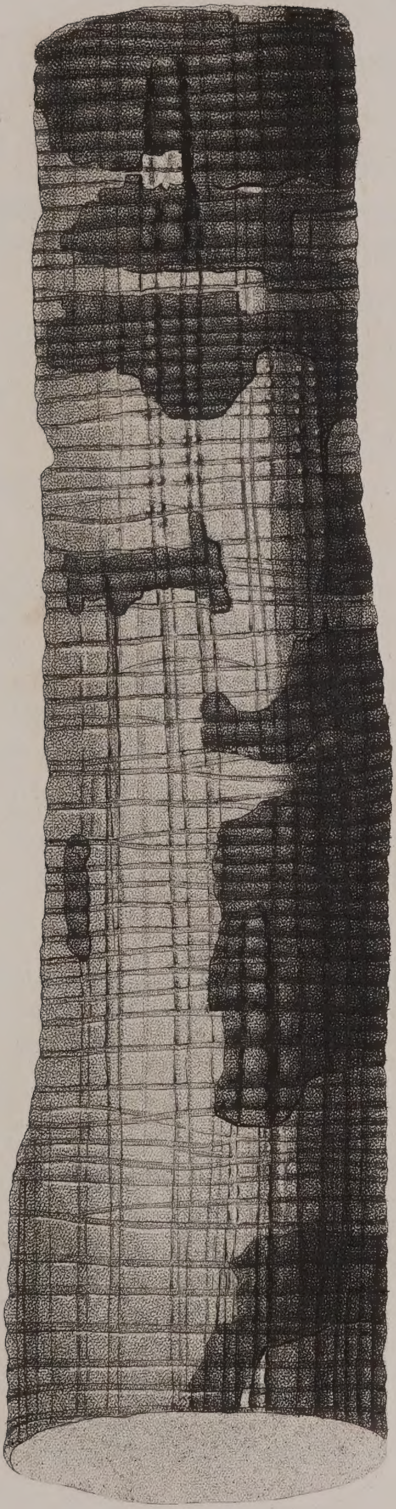

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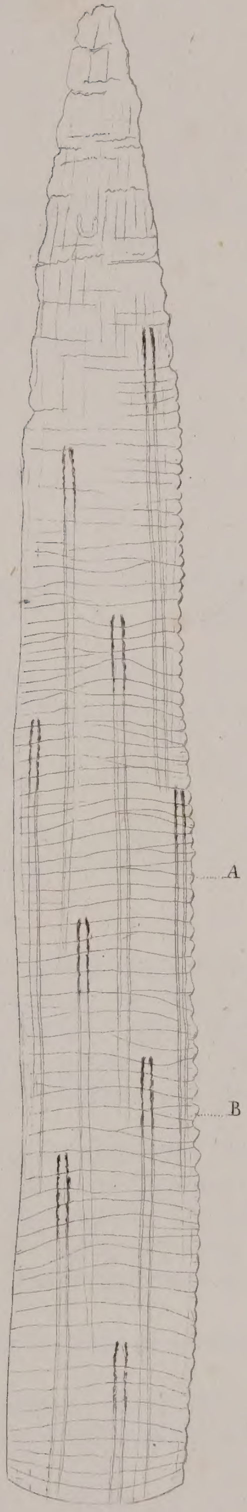

J Curtis Del.   Pub. by E. T Artis London 1824.   Weddell Sc.

STERNBERGIA TRANSVERSA.

TRANSVERSE STERNBERG.

Generic Character.

Stem with double longitudinal keels, terminating at different heights spirally round the stem, and furnished at their termination with small tubercles.

Specific Character.

STERNBERGIA transversa. *Stem* ringed transversely; *rings* mostly distinct, sometimes uniting two or more together.

Synonyms.

This fossil plant has not been found described, or figured.

Description and Locality.

Stem (1) straight, simple, cylindrical, becoming compressed at the end; (2) sometimes six feet in length, and from one to four inches in diameter, barked; *bark* bituminized.

Keels in pairs, (AB) ascending longitudinally up the stem, to different heights; *terminations* disposed spirally round the stem, tuberculated; *tubercles* small, numerous, concealing prickles, which become more visible where the stem is unbarked.

Transverse rings slightly impressed, either single, or two or more intersecting each other; obliterated near the tip. (2)

Found, lying horizontally, accompanied with Calamites ramosus and C. pseudo-bambusia, in the clay-bind which alternates with the sandstone of Lea-brook quarry.

Observations.

Count Sternberg has figured a small specimen of a plant of this kind, in his 17th plate, which was obtained from the galleries of a mine at Wranowitz, in the Lordship of Radnitz, and whose interior was filled with a greyish sandstone. He considers it to have some resemblance to the recent genus yucca, or perhaps pandanus. Although it certainly belongs to this genus, nevertheless it is evidently a distinct species from that here figured.

The Count also quotes the Lithoxila lineis rectis et transversis cancellata, of Volkmann in his Silesia subterranea, as greatly related to the plant he figures.

There appears to be a considerable analogy between the appearance of these stems and those of the stapeliæ of our gardens; but still this external form of the stem, which is the only character visible, does not furnish sufficient ground for their being positively referred to that genus.

The name of Sternbergia has been given to this genus in honour of that illustrious naturalist, who has so ably studied these fossil plants.

The first figure shows a portion of the trunk of the original size; the second the upper extremity in which the tubercular terminations of the double keels is shown at A and B.

IX

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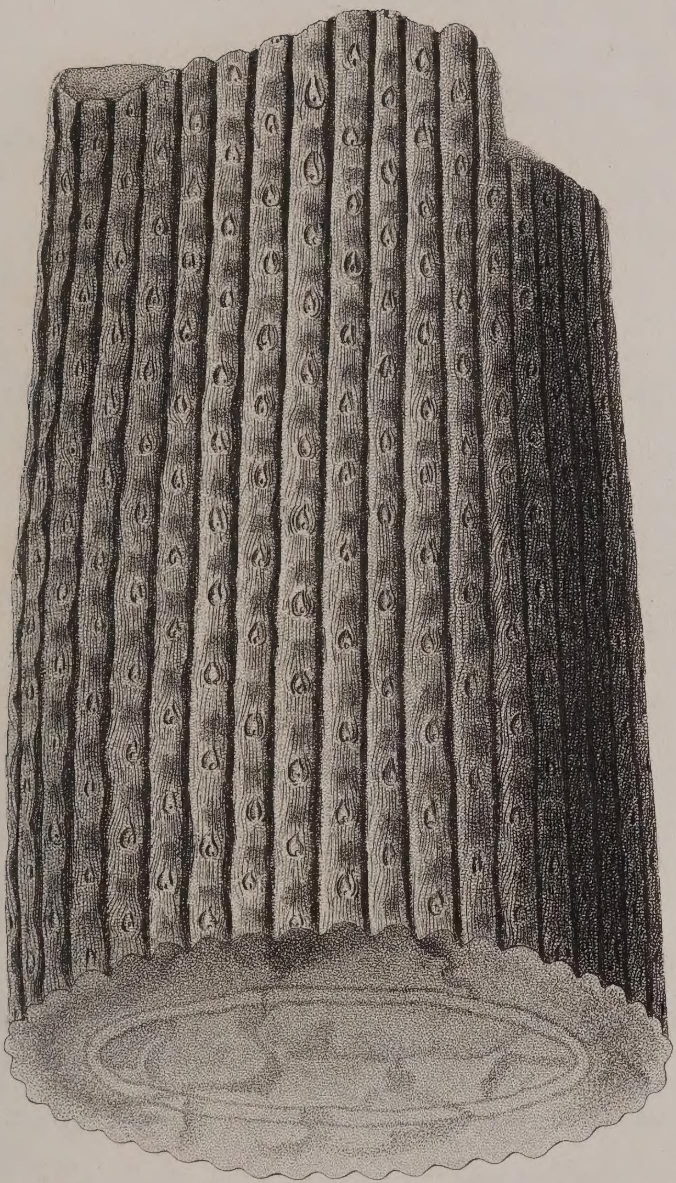

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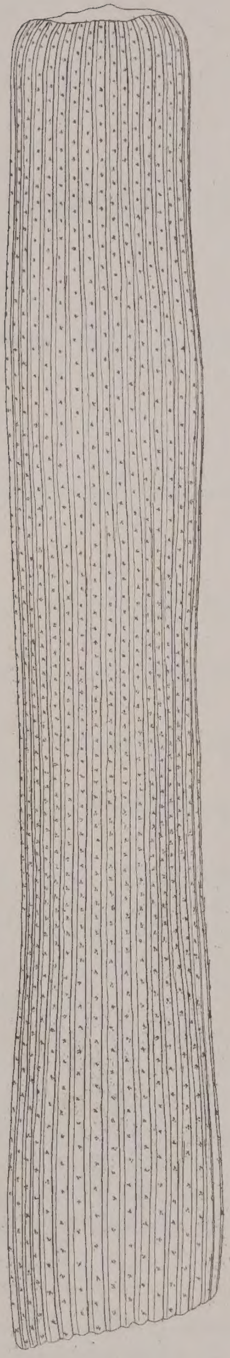

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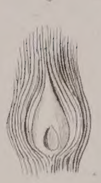

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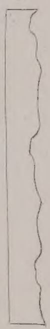


J. Curtis Del.   Pub. by E. T Artis. London 1824.   Weddell Sc.

RHYTIDOLEPIS FIBROSA.

FIBROUS RHYTIDOLEPIS.

Generic Character.

Stem simple, furrowed; *furrows* wavy, impressed with dots or simple lines placed on the ridge.

Specific Character.

RHYTIDOLEPIS fibrosa. Cicatrices ovate, subpentagonal, with a single gland; *surfaces* of the ridges fibrous.

Synonyms.

This species has not been found described, or figured, in any work on fossil plants.

Description and Locality.

Stem simple, cylindrical, (sometimes pressed flat) furrowed longitudinally, 3 feet long, and 4 inches in diameter; terminating abruptly.

Furrows small, *ridges* semicircular, wavy, being enlarged round the cicatrices; *surface* fibrous.

Cicatrices on the top of the ridge, ovate subpentagonal with the lower angles rounded, having a single gland near their lower rounded extremity.

Found vertical, in the sandstone of a quarry at Rowmarsh, near Rotherham in Yorkshire.

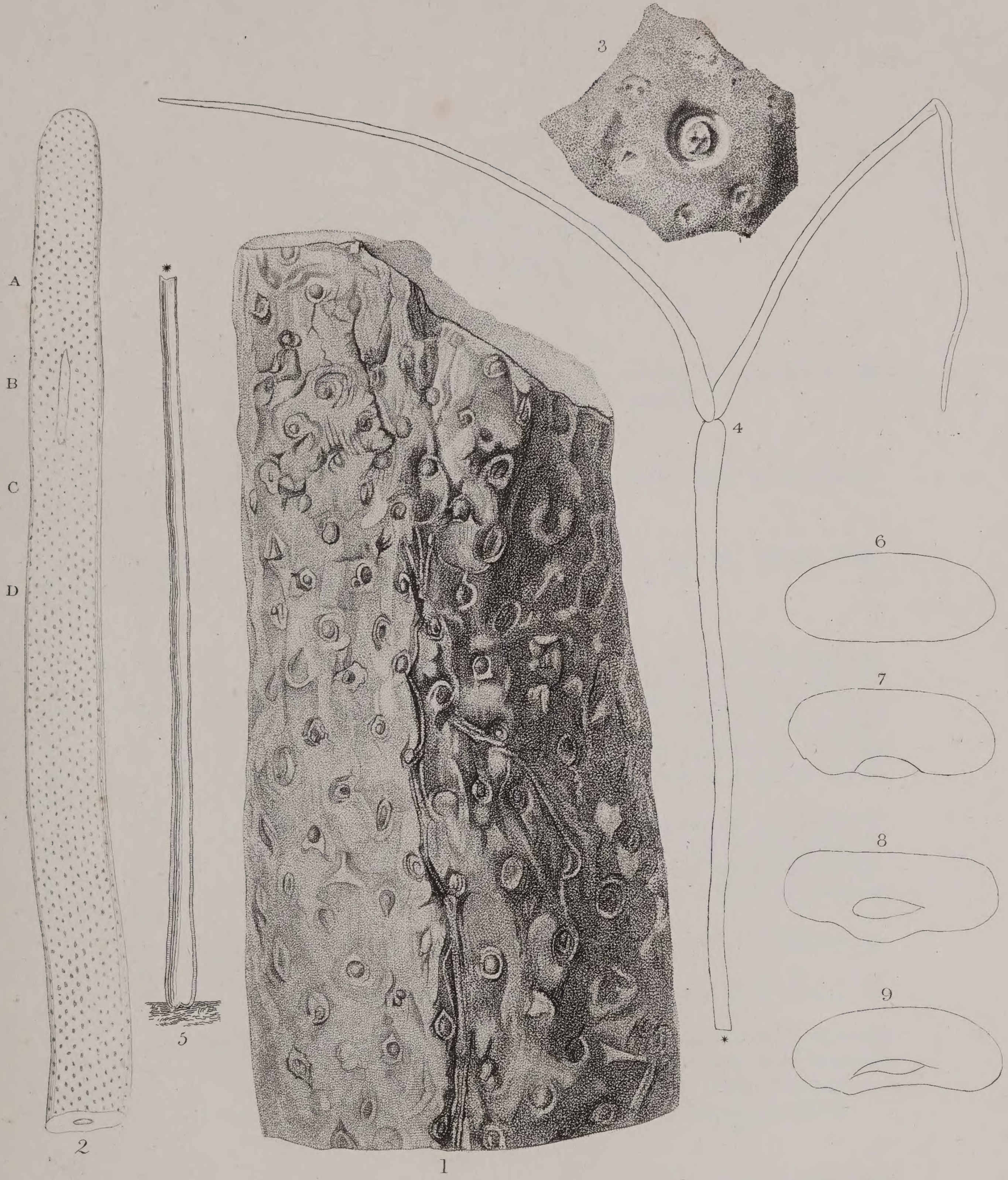
A very similar fossil is also found in the El-se-car coal mine, near Wentworth; but these specimens are usually pressed flat, and have the external membrane bituminized: in consequence of this pressure the undulation of the ridge forms a transverse line, which gives the stem a tessellated appearance, especially near the upper extremity where the cicatrices are closer together than at the lower end.

The section of this species, which has never as yet been found with any traces of bark upon it, as exhibited in fig. 1, shows, by its double concentric ring, some slight appearance of internal organization, which also appears in some degree by the fibrous striæ of the surface of the ridges, resembling that of some species of wood. Fig. 2, shows the great equality of the stem throughout its whole length and its abrupt termination. Fig. 3, expresses the cicatrix with its single gland, on which the leaf was probably inserted: and the 4th figure shows the wavy line formed by the top of the ridge.

Observations.

Of the fossil plants hitherto figured, that which comes nearest to this species, is the Rhytidolepis ocellata of Count Sternberg in his 15th plate; but the form of the cicatrix is different.

Dr. Martius is doubtful whether the plant figured in the Count's plate should be considered as one of his cactites or euphorbites.


3
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J. Curtis Del.

Pub. by E. T. Artis London 1824.

Weddell Sc.

FICOIDITES VERRUCOSUS.

WARTY FICOIDITE.

Generic Character.

Stem with cicatrices; *cicatrices* distant, depressed, having a tubercle in the centre surrounded by a hollow; *tubercles* bearing leaves or spines.

Specific Character.

FICOIDITES verrucosus. *Tubercles* of two sizes, surrounded by a hollow: *leaves* or *spines* jointed, forked.

Synonyms.

Phytolithus verrucosus. *Martin,* Petref. Derb. pl. 11, 12, and 13. *Americ.* Phil. Trans. new series, vol. 1, p. 268, pl. 4, fig. 1, 2, and 3.

Description and Locality.

Stem (1) simple, semicylindrical, terminating abruptly, about five or six feet long, and four inches in diameter, tuberculated and grooved on the compressed side, inclosing a spike (or young plant?) the direction of which is shewn by the several sections, (fig. 6, 7, 8, 9,) taken in different parts of the stem, as marked on the outline, fig. 2, at A, B, C, D, respectively. This *spike* when it approaches near the upper extremity of the stem appears externally, and is received in a groove which extends some little way beyond the point of the spike.

Tubercles (3) of two sizes, both ascending spirally around the stem, and seated in hollow cups, the larger fewer in number, with a flat ragged top as if broken short, the smaller situated in the spiral lines, much more numerous and one-third smaller, hemispherical, rather acuminated at top, terminated by a gland, to which there is often attached a leaf or spine (5).

Leaves or spines cylindrical, about eighteen inches long, forked, (4) jointed, terminating in a sharp point.

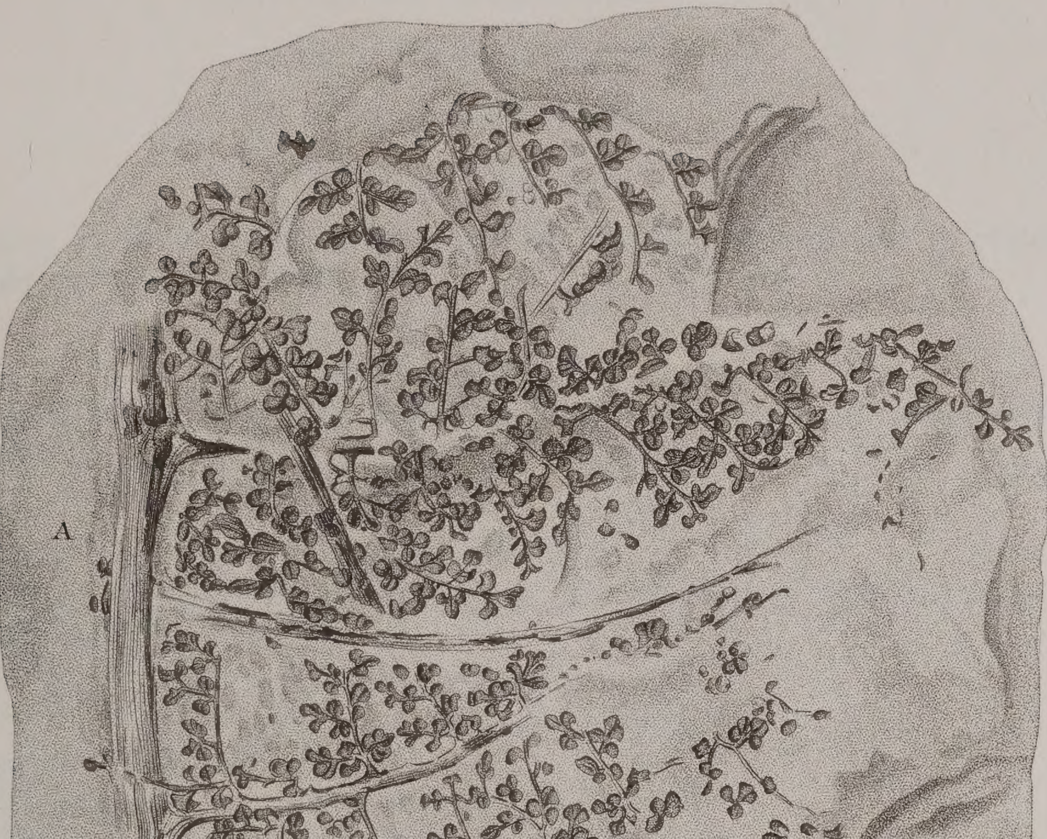
Found in the clay-bind incumbent on the sandstone, within a few feet of the surface.

Traces of this fossil plant are also found on the upper side of the nine feet coal in the El-se-car mine; which is 250 feet below the surface: but these specimens are compressed; and consequently the internal spike cannot be seen. Some of these are converted into coal, which contains a considerable portion of sulphureous matter.

Observations.

The semi-compressed form of the stem, with a longitudinal groove is not alone peculiar to this species, as it is also found in fossil plants, distinguished by very opposite characters.

The internal spike would appear to be a young plant, which perforating its parent, at length bursts it, and assumes its place: the surface of the spike which appears externally, is characterised exactly the same as the parent stem.



J. Curtis Del.

Pub. by E. T. Artis London 1824.

Weddell Sc.

FILICITES TRIFOLIOLATUS.

THREE-LEAFLETTED FILICITE.

Generic Character.

Leaf, or, *frond*, forming a flat surface, the two sides of which are symmetric; *secondary rib* simple or forked.

Specific Character.

FILICITES trifoliolatus. Leaf or frond tripinnate; pinnæ or lobes alternate, with an odd one; *leaflets* ternate, lobes roundish, convex.

Synonyms.

This fossil plant does not seem to have been described or figured by any preceding author.

Description and Locality.

Frond or leaf tripinnate.

Pinnæ or wings lanceolate, alternate, with an odd one.

Pinnules lanceolate, alternate, with an odd one.

Leaflets ternate, foot-stalked, alternate, roundish, convex.

Found in the shale of El-se-car new colliery, in that part of the mine which is near Milton Furnace, Yorkshire.

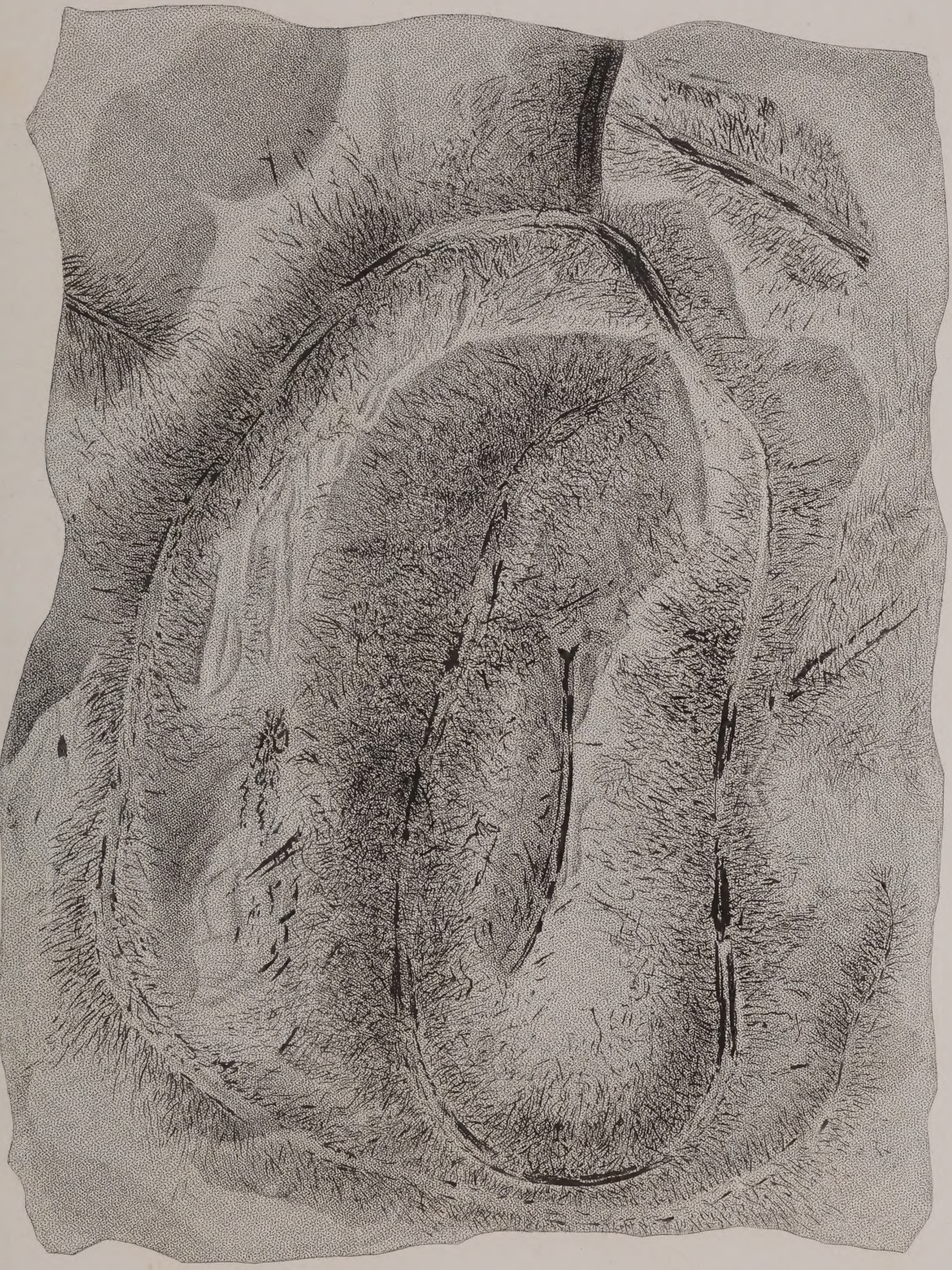
Observations.

This is by no means a common species, for in 1821 more than a ton of the shale in this mine was examined, and only the single specimen here figured was obtained. The same place has been visited twice since, and examined, but without success.

This fossil plant has been compared with the tropical ferns, and seems nearly allied to the genera, davallia or cheilanthus; but from the almost general absence of the organs of fructification amongst fossil plants, the referring of them absolutely to the several genera of recent plants is impossible.

It is referrable to Adolphe Brongniart's second subgenus of filicites, which he denominates sphenopteris.

The figure represents at A, the cast or matrix of the under side of the leaf, and at B, the relievo of the upper side.



J. Curtis Del.

Pub. by. E. T. Artis. London 1824.

Weddell Sc

MYRIOPHYLLITES GRACILIS.

SLENDER MYRIOPHYLLITE.

Generic Character.

Stem herbaceous, slender; *leaves* numerous, linear, small.

Specific Character.

MYRIOPHYLLITES gracilis. Stem terminating in a sharp point, the whole thickly covered with hair-like leaves.

Synonyms.

This plant has not been found described, or figured in any work.

Description and Locality.

Stem very long, slender, sometimes straight, sometimes (as represented in the figure) coiled, the base being in the centre.

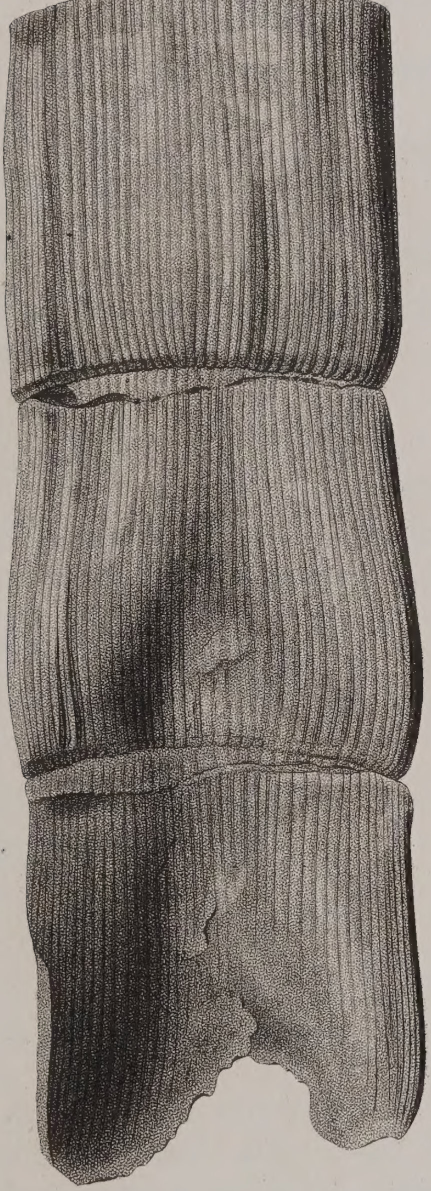
Leaves numerous, particularly at the base of the stem, hair-like.

Found imbedded, horizontally in detached masses separate from the great bed of vegetable matter which covers the coal by an intervening bed of shale This species is however, rarely met with in the same mass with other vegetables, but generally in solitary and thin beds, taking a horizontal position, so that by riving the shale which contains these plants, numbers of them are disclosed on one and the same surface.

Observations.

The specimen figured was obtained with several of the same species in El-se-car new Colliery, in August 1818. The props which supported the roof of the coal having been removed a short time previous to that period, there had been only one fall of the super-incumbent shale, and this is probably the most favourable time for collecting them, as in these spontaneous falls the rock naturally splits in those parts where the presence of plants renders it weakest.

1



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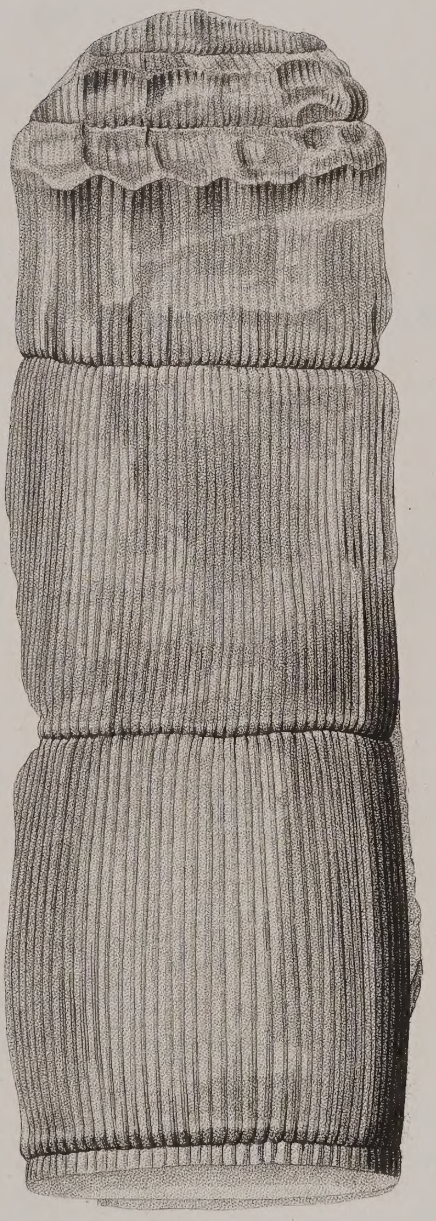


J. Curtis Del.

Pub. by E. T. Artis, London, 1824.

Weddell Sc.

CALAMITES DUBIUS.

DOUBTFUL CALAMITE.

Generic Character.

Stem jointed, longitudinally striated; *impressions* at the articulations usually forming rings round the trunk.

Specific Character.

CALAMITES dubius. *Striæ* narrow, with a fine obscure groove running down their middle; the fifth or sixth *articulation* surrounded by a double line of impressions.

Synonyms.

This fossil plant does not seem to have been described or figured by any preceding writer.

Description and Locality.

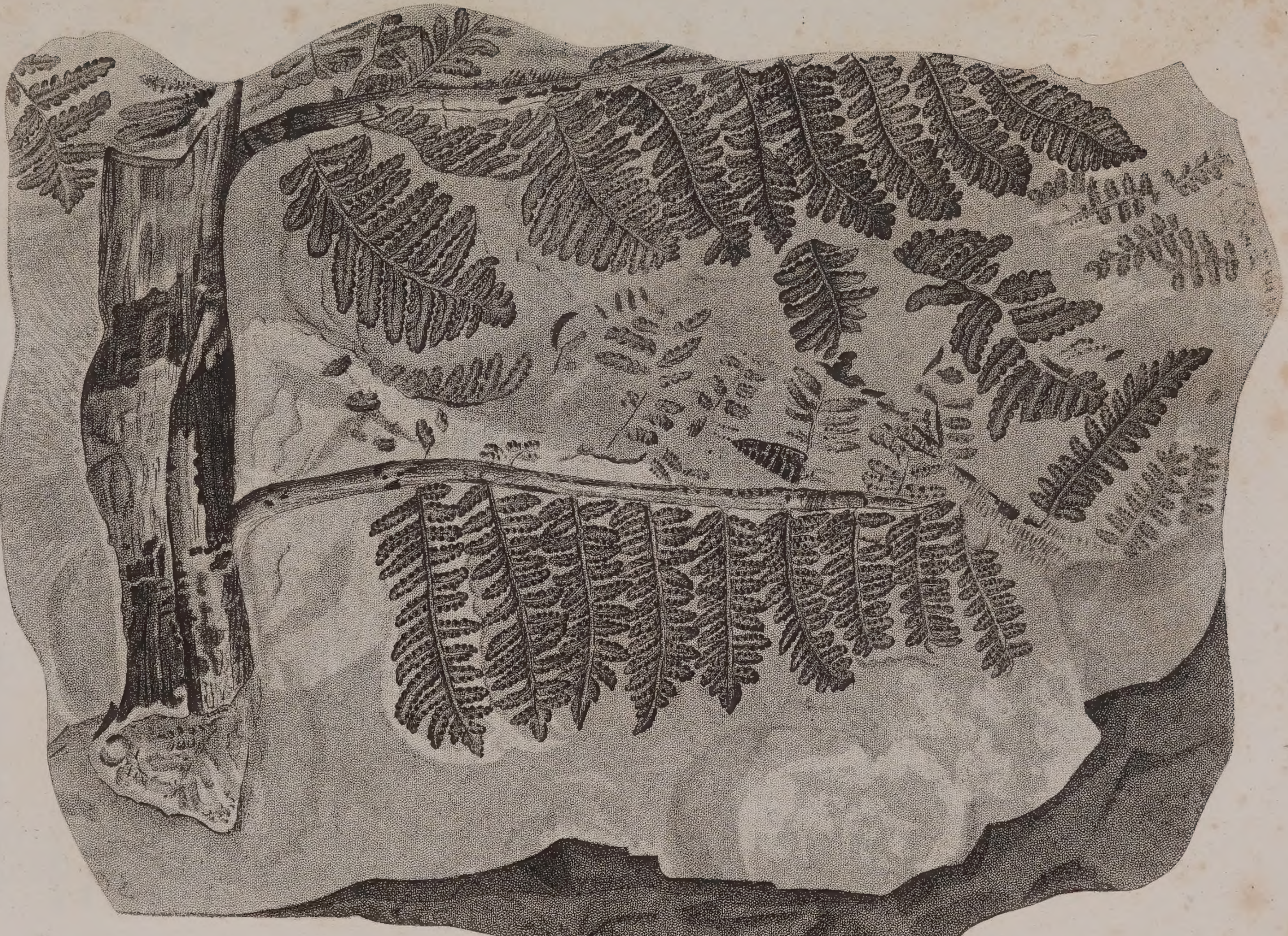
Stem compressed, jointed, from two to three feet in length; termination not known.

Joints striated with numerous slender striæ, each having a fine but obscure groove running along their centre: the two lower joints semicylindrical and hollow, as if they had partly surrounded a larger stem, as shewn in figure 1.

Articulations forming a rather irregular linear suture: the fifth or sixth has a double line of large globular impressions, one line belonging to each of the connected joints, and apparently left by a circle of some fleshy organs, which had once surrounded the joints, and by their pressure left this indented frill, as in figure 2.

Found in the sandstone of Lea-brook quarry, near Wentworth, in Yorkshire.

XIV



J. Curtis Del. Pub. by E. T. Artis London 1824. Weddell Sc.

FILICITES MILTONI.

MILTON FILICITE.

Generic Character.

Leaf, or, *frond,* forming a flat surface, the two sides of which are symmetric ; *secondary rib* simple or forked.

Specific Character.

FILICITES Miltoni. *Leaf,* or, *frond,* tripinnate ; *leaflets* adherent to the rachis ; *fructifications* in lines near the margin.

Synonyms.

This species of fossil plant does not seem to have been described or figured by any writer on the subject.

Description and Locality.

Frond tripinnate ; stipes large, strong.

Leaflets linear, tip rounded.

Fructifications surrounding the leaflets near, but not entirely on, the margin.

Found imbedded in shale, in that part of El-se-car new colliery, situated near Milton Furnace.

Observations.

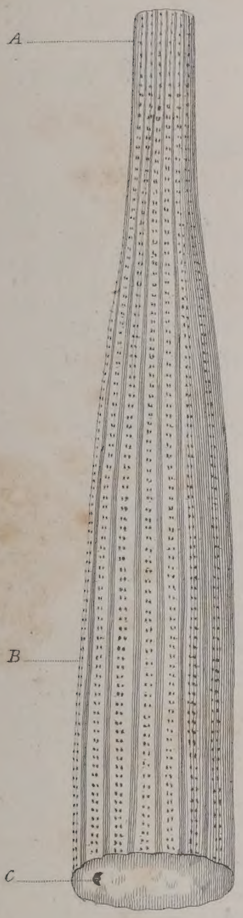
The fructifications seated on the back of the leaves are not so closely seated on the margin as is expressed in the plate, neither is the rib of the pinnæ so rounded as is represented.

The plant itself fell from the roof of a chamber in the El-se-car coal mine, at a time when the shale was being riven in search of plants, at which time several tons weight fell down, but the accident was fortunately followed with no other consequence than arose from the alarm.

There is a slight trace of veins in the original, but so faint that their direction could not be accurately ascertained.

XV.

1.



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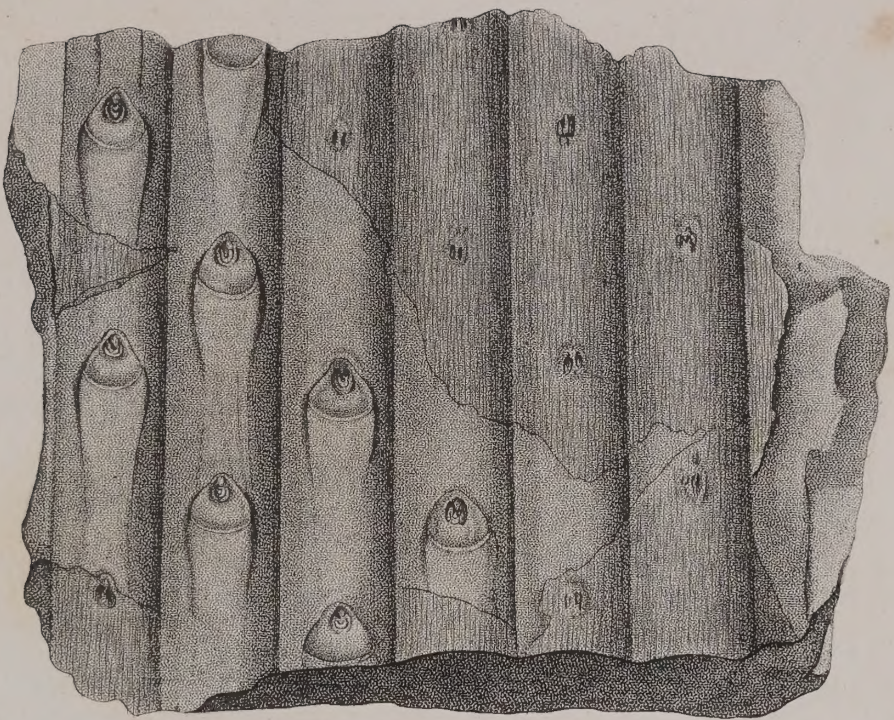

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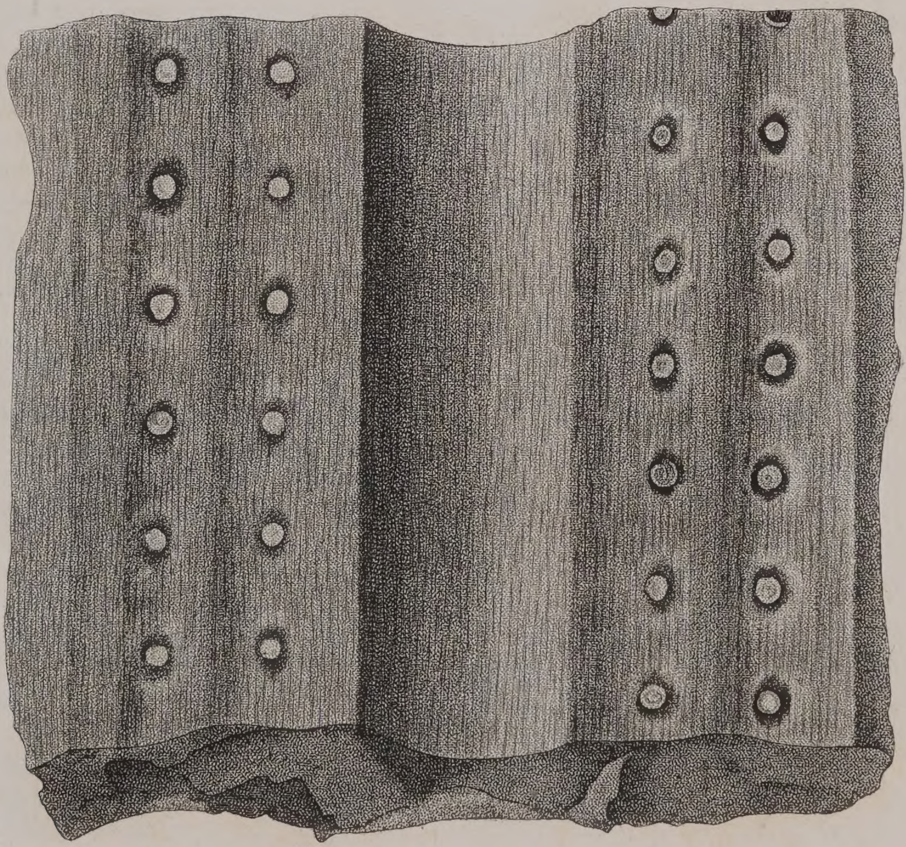


E. T. Artis Del.　　Pub. by E. T. Artis, London 1824.　　Weddell Sc.

EUPHORBITES VULGARIS.

COMMON EUPHORBITES.

Generic Character.

Stem arborescent, simple, subconical, furrowed; *cicatrices* on the ridge, generally nicked.

Specific Character.

EUPHORBITES vulgaris. *Cicatrices* flat, fishshaped, the upper part trigonal; *glands* two, which when the bark is absent appear as twin tubercles on the ligneous fibres.

Synonyms.

This fossil plant does not appear to have been described or figured by any author.

Description and Locality.

Stem attains the length of nine feet, very wide at bottom, and narrower at the upper extremity, furrowed.

Furrows at the upper end narrow, but at the lower end much expanded, as shewn in the lower figure; ridges of the upper extremity pipelike, parted by a simple line; but those of the lower extremity wide, flat, and parted by a groove of equal breadth.

Cicatrices on the bark flat, resembling fishes, the upper part three-sided, the upper angle forked, the lower rounded, glands two, towards the upper part of the cicatrix. When the bark is absent, the woody part presents a fibrous appearance, and these glands remaining form twin tubercles, close together in the upper part of the stem, but in the lower part distant, although the cicatrices appear to have been nearer together in the longitudinal direction. There is also a small dot on the cicatrix between the two glands, which is but superficial, and does not appear on the woody part of the stem.

Pith slender, passes up one side of the trunk.

Found in the greatest part of the coal formations of Europe: either in immense masses incumbent on the coal, or in a vertical position, in which position its lower extremity frequently rests on the thin shale which covers the coal.

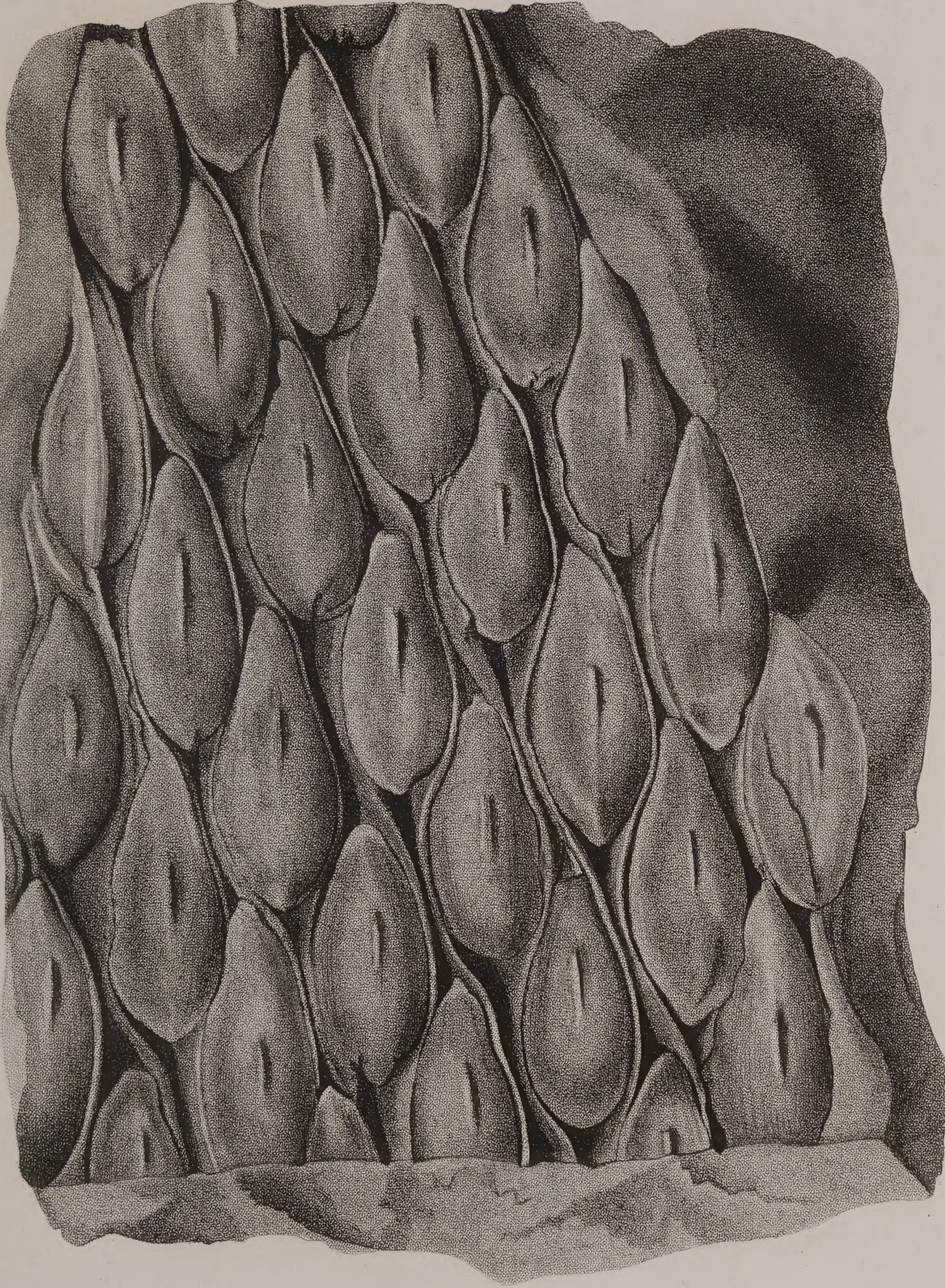
Observations.

The specimen from which the drawing was made is now in the possession of the Rev. Samuel Sharp, Vicar of Wakefield, who procured it from a sandstone quarry near Altofts in Yorkshire, the property of Sir Edward Dodsworth, who has also one of the same species in his garden, where it forms one side of the entrance to a grotto.

In one of the abandoned chambers of the upper El-se-car coal mine, seven trunks of this plant were suspended freely from the roof; some of them projected a foot, and the largest measured eight feet in circumference.

The specimen figured is nine feet long, five feet in circumference at the lower extremity, and only one foot nine inches at the upper.

The first figure represents a sketch of the whole trunk, and shews also the situation of the pith at C. The second figure represents a portion of the upper part, as at A. fig. 1. of the natural size, in which is shewn the different appearance of the bark and unbarked surface. The third figure shews a portion of the lower extremity, from about B. fig. 1. in which the deep concave furrow, the flattened ridge, the twin glands placed at a greater distance apart in the horizontal direction, but much nearer in the longitudinal, are exhibited.



E. T. Artis. Del.

Pub. by. E. T. Artis. London. 1824.

Weddell Sc.

APHYLLUM CRISTATUM.

CRESTED APHYLLUM.

Generic Character.

Stem arborescent, covered with fleshy scales, inserted in hollows furnished with glands.

Specific Character.

APHYLLUM cristatum. *Scales* obovate, with an oblong crest in their centre; *interstices* forming angular furrows.

Synonyms.

This fossil plant has not yet been described, or figured.

Description and Locality.

Stem cylindrical, covered with leaf-like scales, the interstices forming furrows whose sides meet in an angle at bottom.

Scales leaf-like, ovate, thick, pressed close to the stem, crested in the middle; crest oblong, narrow.

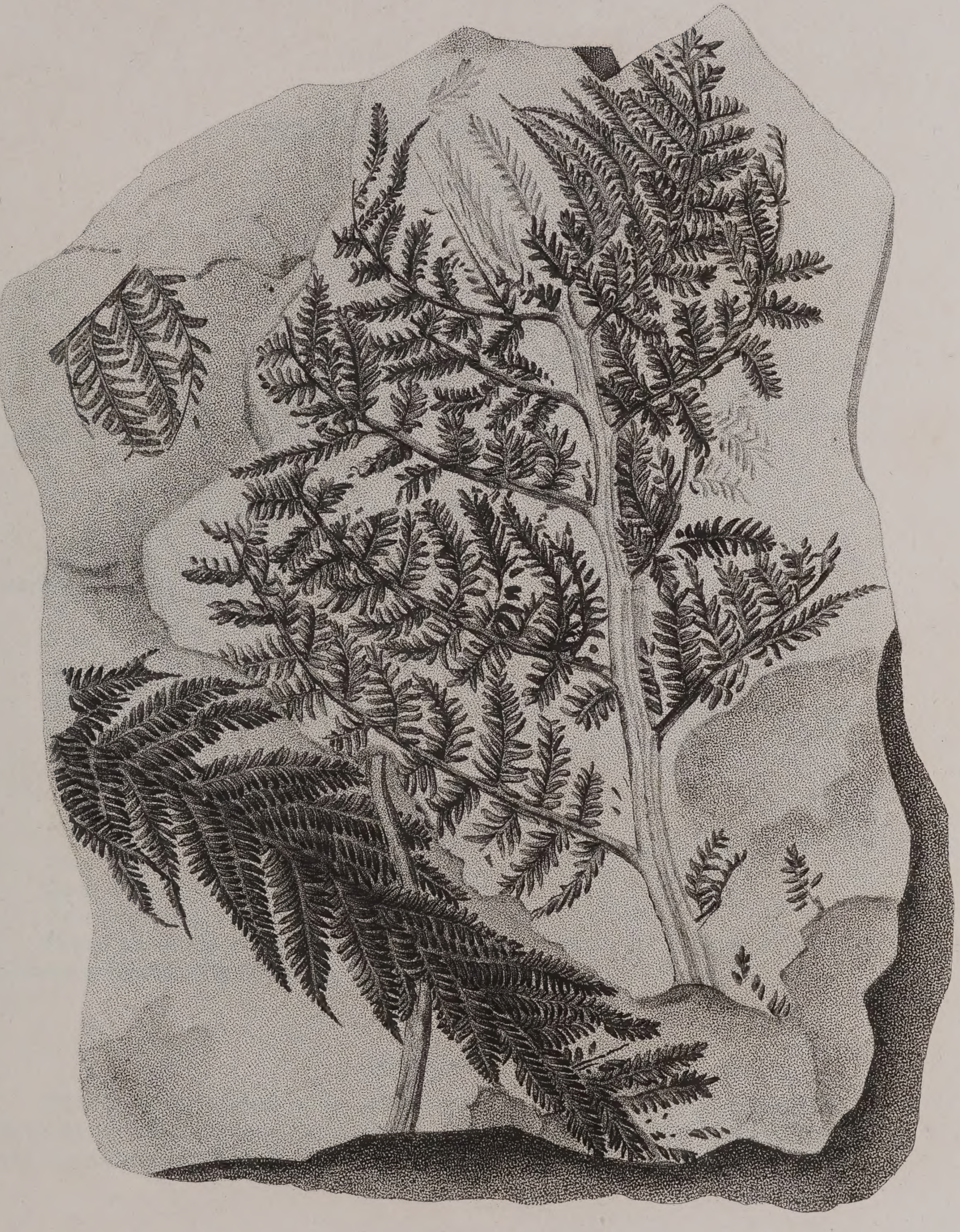
Found in a sandstone quarry at Banktop, in Yorkshire.

Observations.

The specimen figured is part of a stem broke up by the quarry-men in getting stone for the inclosure of Barnsley Common; the whole of the remainder was broke up by them, and so entirely destroyed that no other part of it could be recovered.

According to their account, the stem must have been nearly forty feet in length, and near two feet thick, placed obliquely in the rock, appearing on the face of it from the top to the bottom, and must have weighed nearly three tons.

Count Sternberg has figured, in his Essai, No. 3, pl. 28, a somewhat similar fossil plant, under the name of lepidodendron appendiculatum, the scales of which are rather smaller, and have an appendage which fills up the furrows of the interstices. His specimen was from the cabinet of the Grand Duke of Hesse Darmstadt, but it does not appear that the place where it had been found was known.



J. Curtis Del.

Pub. by E. T. Artis, London 1824.

Weddell Sc.

FILICITES PLUMOSUS.

PLUME FILICITE.

Generic Character.

Leaf, or, *frond,* forming a flat surface, the two sides of which are symmetric; *secondary rib* simple or forked.

Specific Character.

FILICITES plumosus. *Frond* or *leaf* tripinnate with an odd one; *stipes* wavy; *leaflets* lanceolate, sessile.

Synonyms.

This species of fossil plant has not been noticed or figured by any known author.

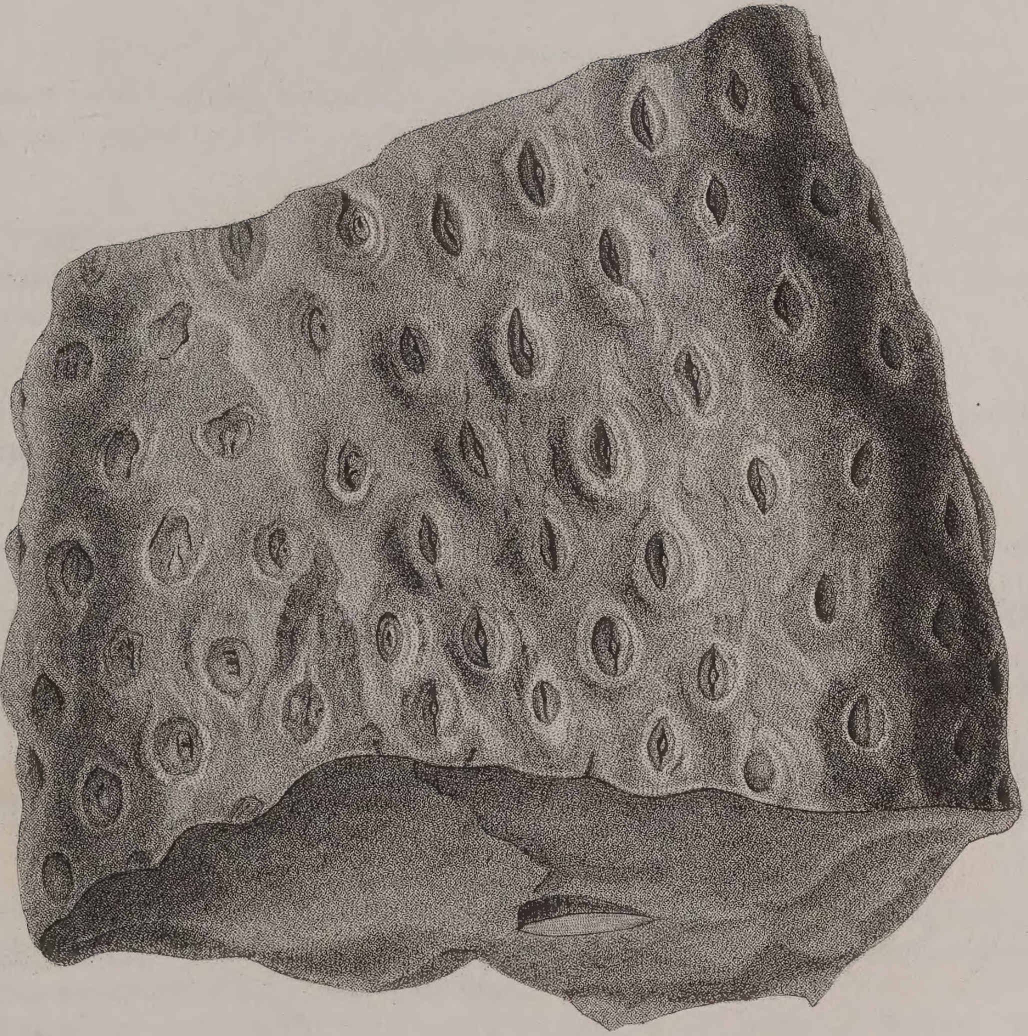
Description and Locality.

Frond tripinnate with an odd one; stipes wavy.
Pinnæ, lobes and leaflets alternate.
Leaflets lanceolate, sessile.
Fructification near the margin of the leaflet.

Found imbedded in the shale of El-se-car new Colliery, in that part only which is situated immediately under the reservoir.

Observations.

This fossil plant seems to be of very rare occurrence in the coal formations of England, as it has not been found in any other place than that from which the specimen figured was taken.



J. Curtis Del. Pub. by E. T. Artis London 1824. Weddell Sc

FICOIDITES MAJOR.

GREAT FICOIDITE.

Generic Character.

Stem with cicatrices; *cicatrices* distant, depressed, having a tubercle in the centre, surrounded by a hollow; *tubercles* bearing leaves or spines.

Specific Character.

FICOIDITES major. *Stem* with a spike up the centre; *cicatrices* distant, oval sides compressed against the tubercles; *tubercles* oval, at the base with a longitudinal furrow at top.

Synonyms.

It does not appear that this fossil plant has as yet been described or figured by any author.

Description and Locality.

Stem cylindrico-compressed, from five to six inches in diameter, with a pith or spike, nearest the compressed side.

Cicatrices oval, with a tubercle in their centre, which seems to have suffered from pressure, as it rises but little above the surface.

Tubercles oval at the base, compressed, longitudinally furrowed at top, with a gland in the furrow.

Found in a sandstone quarry near Rotherham, in Yorkshire, as also at Crudling, near Stanley, in the same county.

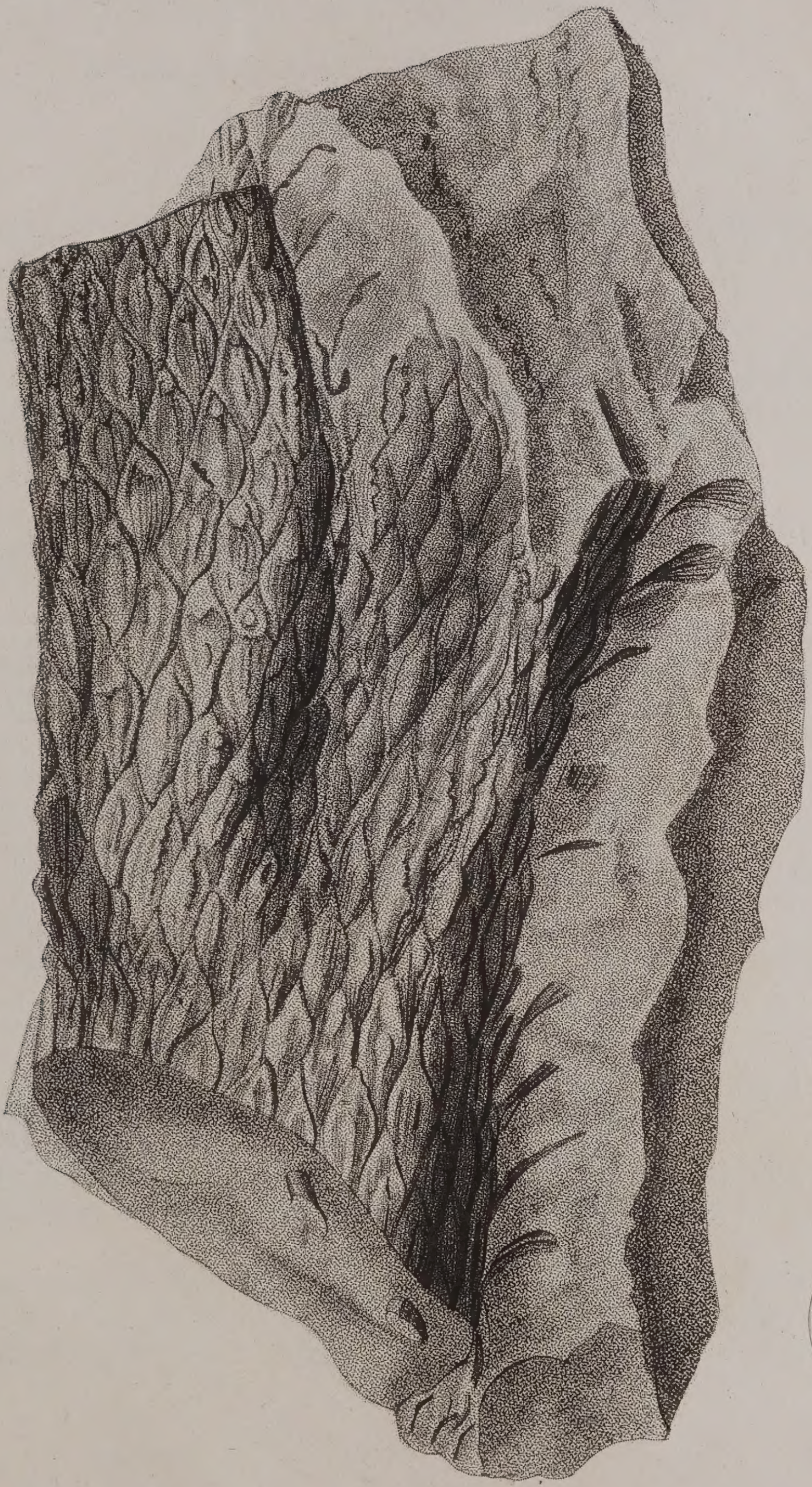
Observations.

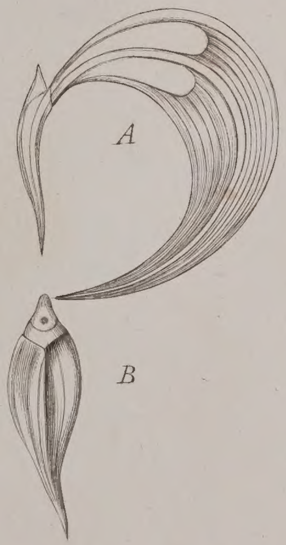
These fossil plants do not seem to vary much in size, nor are they found imbedded with any of the others, but more frequently in detached masses, indicating that they are confined to peculiar situations.

The specimens from Crudling were procured by the Reverend Samuel Sharp, Vicar of Wakefield, in whose possession they now remain.

Mr. Martin in his Petrificata Derbiensia has given an illustration of this family, accompanied by the supposed leaves of the plant, which has been looked upon as vague and inaccurate; but the figure which has already been given in the third plate, and those of other species which will hereafter be given, will it is hoped shew that Mr. Martin's ideas on the subject are just.

XIX.





J. Curtis Del. Pub. by E. T. Artis. London. 1824. Weddell Sc

LYCHNOPHORITES SUPERUS.

HIGH-LEAFED LYCHNOPHORITE.

Generic Character.

Stem branched, covered with tubercles ; *tubercles* leaf-bearing ; *leaves* narrow.

Specific Character.

LYCHNOPHORITES superus. Tubercles terminating obtusely at top ; *cicatrix* quadrangular at the upper extremity of the tubercle, gland-bearing ; *gland* central ; *mid-rib* of the leaf forming a continuation of the longitudinal ridge on the back of the tubercle.

Synonyms.

This fossil plant has not yet been found described or figured.

Description and Locality.

Stem cylindrical or slightly compressed, entirely covered with tubercles ; having internally two piths or spines, the surface of which is bituminized.

Tubercles rhomboidal, rather blunt at top, pointed at bottom, ridged longitudinally, with a cicatrix on their upper part.

Cicatrices four-sided, with a small gland in the middle, leaf-bearing.

Leaves lanceolate, ribs many, connivent ; the side ribs absent towards the base, and thus forming two depressions on each side of the mid-rib, which coincides with the ridge of the tubercle.

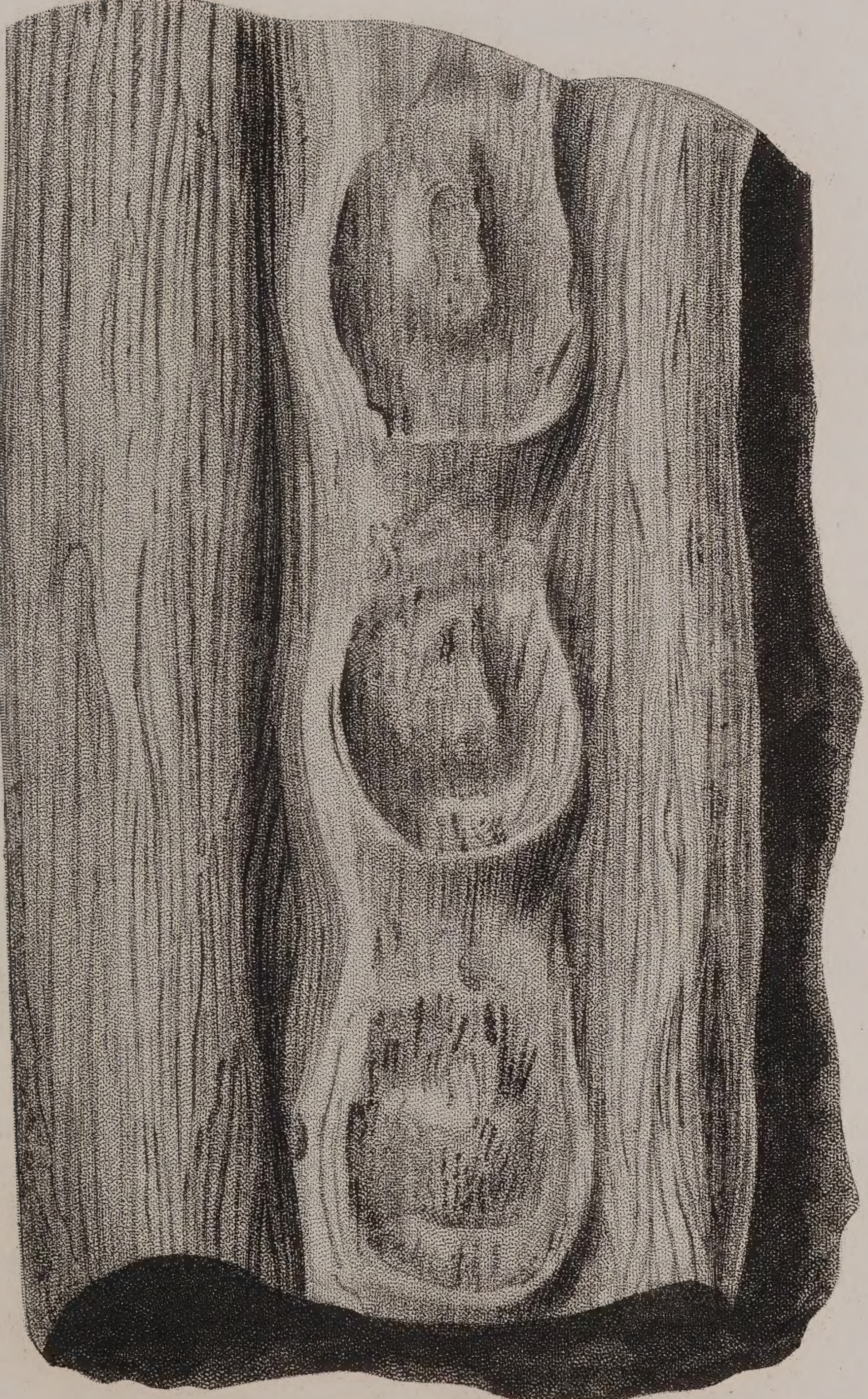
Found in one of the sandstone quarries on Swinton Common, near Rotherham, in Yorkshire.

Observations.

The surface of the internal pith being bituminised seems to indicate that their external membrane was a kind of bark.

The part exhibited in the figure is part of a large branch ; the appendiculated figure A, shows the leaf, and B, the tubercle with the cicatrix and gland in the upper part.

Dr. Martius refers these fossil plants to a recent shrubby genus of syngenesious plants which cover the plains of Brazil, and which he names lychnophora, from whence he formed this fossil genus, by changing the termination, according to the common usage.



J. Curtis Del. Pub. by E. T. Artis. London. 1824. Weddell Sc.

MEGAPHYTON FRONDOSUM.

FRONDOSE MEGAPHYTON.

Generic Character.

Stem arborescent, simple, furrowed longitudinally; *cicatrices* in the furrow between the ridges.

Specific Character.

MEGAPHYTON frondosum. Cicatrices near together, horse-shoe shaped with the points upwards, filling the furrow.

Synonyms.

This fossil plant has not been described or figured by any preceding author.

Description and Locality.

Stem arborescent, simple, furrowed longitudinally, surface coarsely fibrous.

Ridges rounded, large.

Furrows few, wide, flattish.

Cicatrices in the furrow, near together, horse-shoe shape with the points upwards, nearly filling the furrow, gland-bearing.

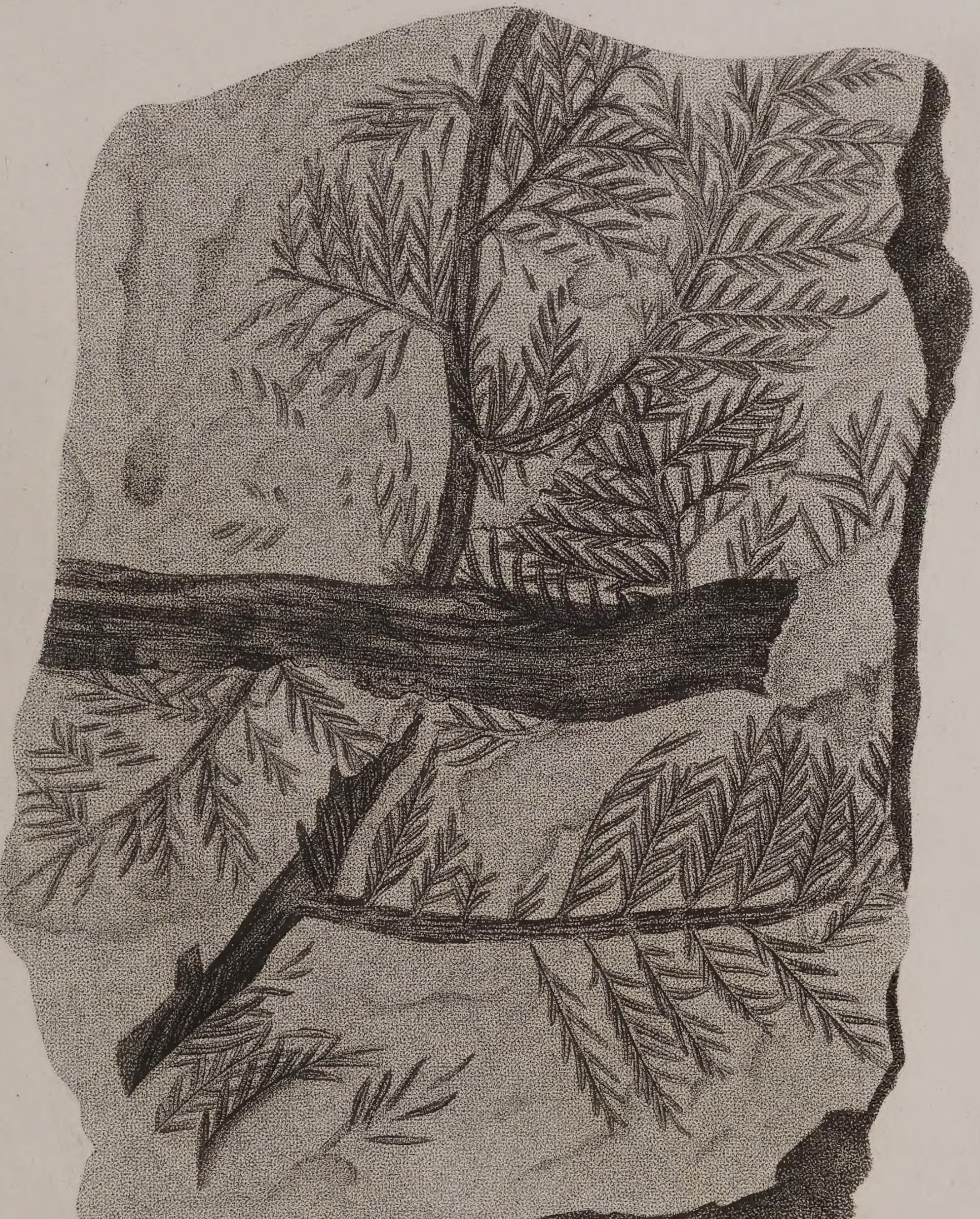
Glands numerous, irregular, ovate or linear.

Found imbedded obliquely in the sandstone of a quarry near Rowmarsh, in Yorkshire.

Observations.

The reticulated fibrous appearance of the surface of the stem, and the characters of the glands, very much resemble those of some of the tree-ferns of tropical countries; there are however other characters which seem to oppose this determination.

The figure represents part of a specimen about ten feet in length.



J. Curtis. Del.

Pub. by E. T. Artis London 1824.

Weddell. Sc.

FILICITES DECURRENS.

DECURRENT FILICITE.

Generic Character.

Leaf, or, *frond,* forming a flat surface, the two sides of which are symmetric; *secondary rib* simple or forked.

Specific Character.

FILICITES decurrens. *Leaf,* or, *frond,* tri- or quadri-pinnate; *leaflets* linear-lanceolate, first leaflets decurrent; *ribs* pinnate.

Synonyms.

This fossil fern does not seem to have been hitherto described or figured by authors.

Description and Locality.

Leaf, or, *frond,* very large, tripinnate or quadripinnate?

Stipes broad, wavy.

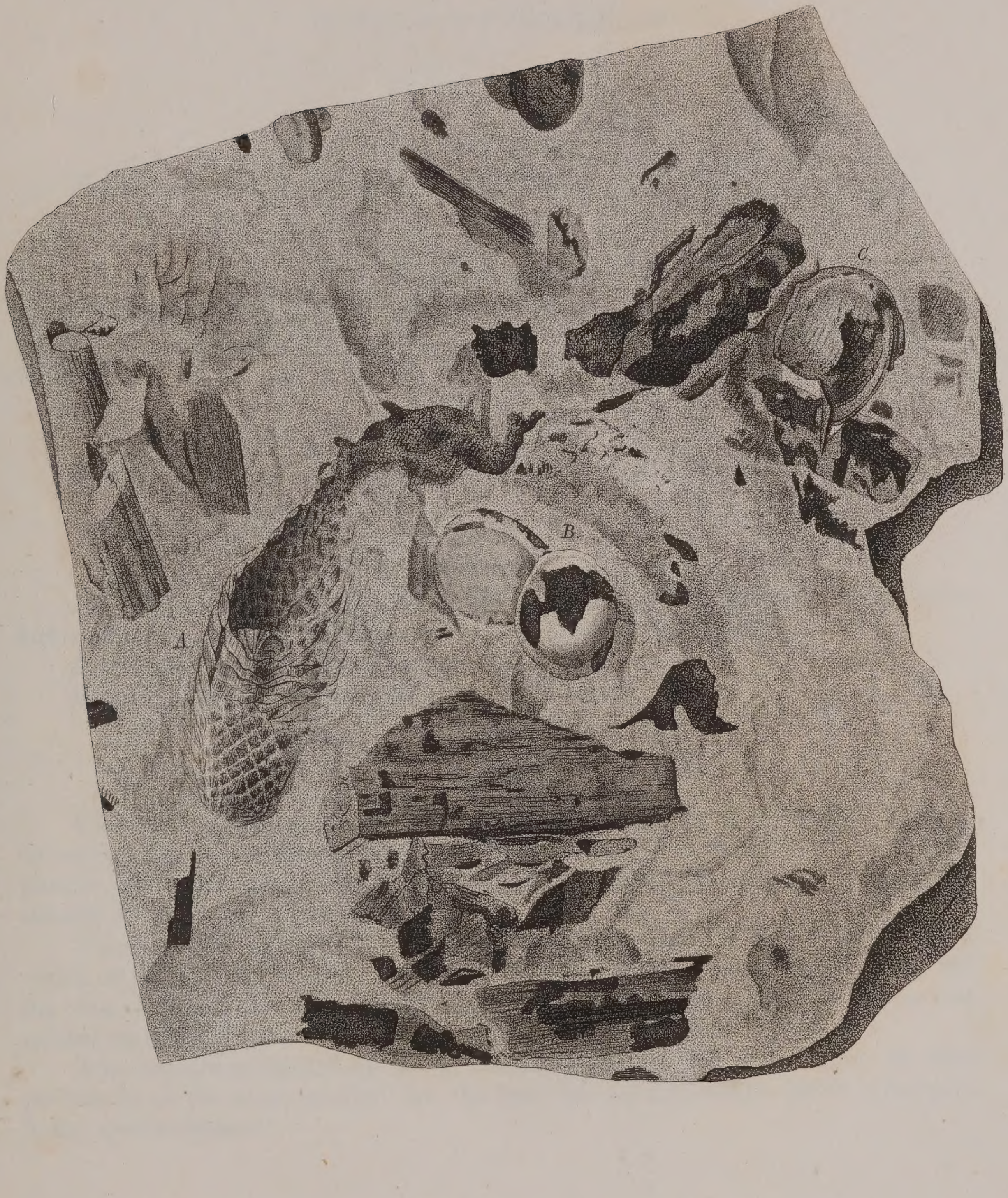
Leaflets linear-lanceolate, sessile; ribs pinnate, the secondary ribs perpendicular to the main rib; the first leaflet on the superior side of the pinnule adherent by its side to the rachis.

Found in great abundance in the shale at Alverthorpe near Wakefield, which is about a yard thick, and 12 or 14 yards below the present surface of the ground. It is also found in the coal mines belonging to the Marchioness of Hertford, near Leeds.

Observation.

This fossil plant, which is of a gigantic size, and of which the drawing exhibits but a small part, was communicated by the Reverend Samuel Sharpe, Vicar of Wakefield.

XXII



J. Curtis Del

Pub. by E. T. Artis London. 1824.

Weddell Sc.

CARPOLITHUS MARGINATUS.

BORDERED CARPOLITHE.

Generic Character.

The *fruits*, or *seeds*, of plants, in a fossil state.

Specific Character.

CARPOLITHUS marginatus. An ovate nut, rather bulged towards the top; edges broad, flattened; the tip blunt, slightly indented; *shell* deeply furrowed longitudinally.

Synonyms.

This fossil fruit has not been found described or figured in any author.

Description and Locality.

Nut ovate, rather bulged towards the top, compressed, flattened on the sides and at the base, tip indented, furrowed longitudinally; furrows rather deep.

Epidermis very thick, bituminous.

Found in the fine sandstone of Lea-brook quarry.

Observations.

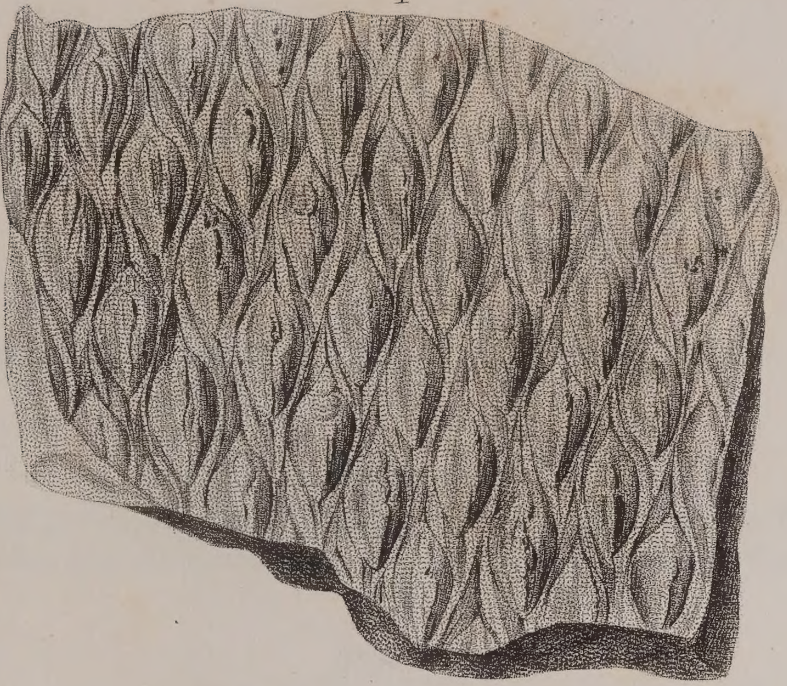
This nut, whose figure is shown at B and C in the plate, is accompanied with a variety of other vegetable remains; such as fragments of sternbergia, of an unknown poacite, and a carpolithus, exhibited at A, which evidently appears to have been the strobile of some tree.

There are also imbedded in the same mass, the remains of several other plants, which are in such an imperfect state that no characters can be given of them: but the view of this mass, taken altogether, serves to show the variety of plants that existed on one and the same surface.

The carpolithus figured by Count Sternberg, in his 7th plate, figure 12, may perhaps be of the same species; but the base has an appendage which is not seen in the species figured.

XXIII.

1



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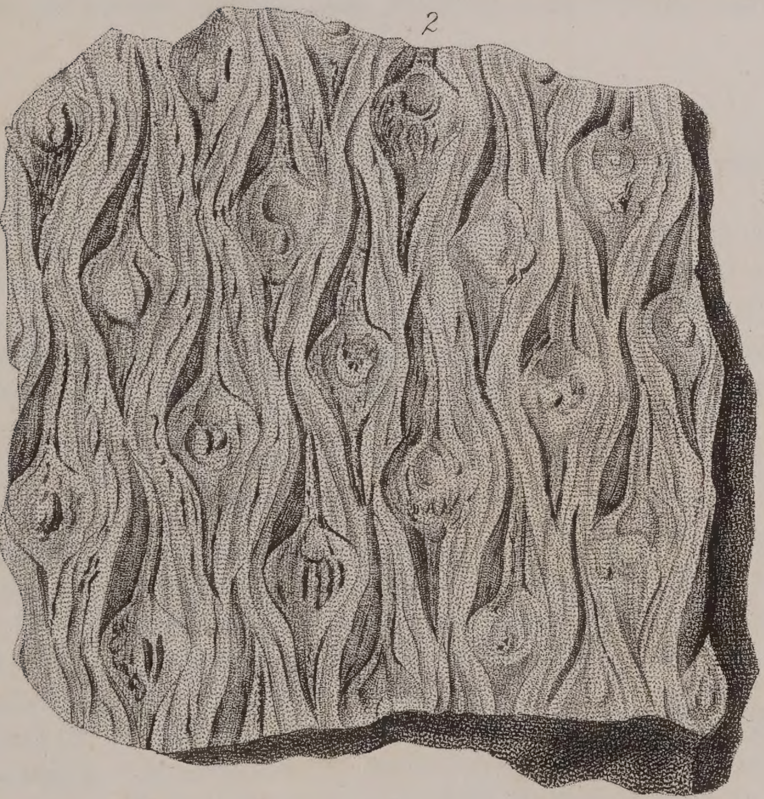
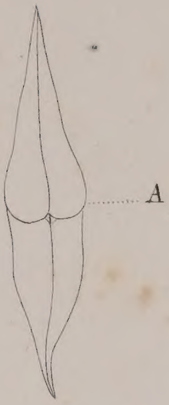
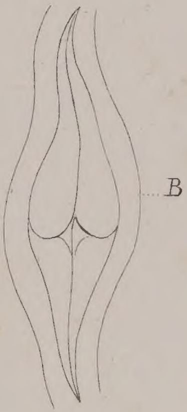
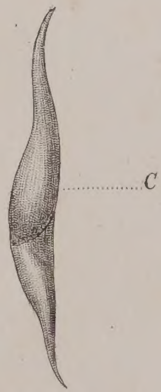




A



B



C

J. Curtis. Del.   Pub. by. E. T. Artis. London: 1824.   Weddell Sc

APHYLLUM ASPERUM.

ROUGH APHYLLUM.

Generic Character.

Stem arborescent, covered with fleshy scales, inserted in hollows furnished with glands.

Specific Character.

APHYLLUM asperum. *Stem* tapering; *scales* long, rhomboidal, those in the lower part of the stem separated by a considerable interstice resembling bark.

Synonyms.

It does not appear that this fossil plant has been hitherto described or figured by authors.

Description and Locality.

Stem arborescent, tapering, the base being twice the diameter of the upper part, covered with scales.

Scales long, rhomboidal, with the angles rounded, rough with irregular longitudinal wrinkles, the interstices separating the scales much wider at the bottom of the stem than at the top; those at the bottom wrinkled, resembling the bark of an elm.

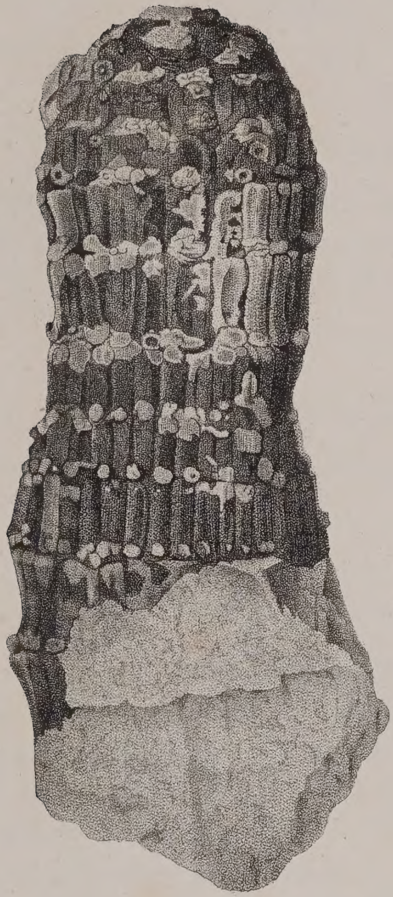
Found imbedded obliquely in shale, near a rent in the strata, in a continuation of the El-se-car nine feet coal, situated near Hoyland, in Yorkshire.

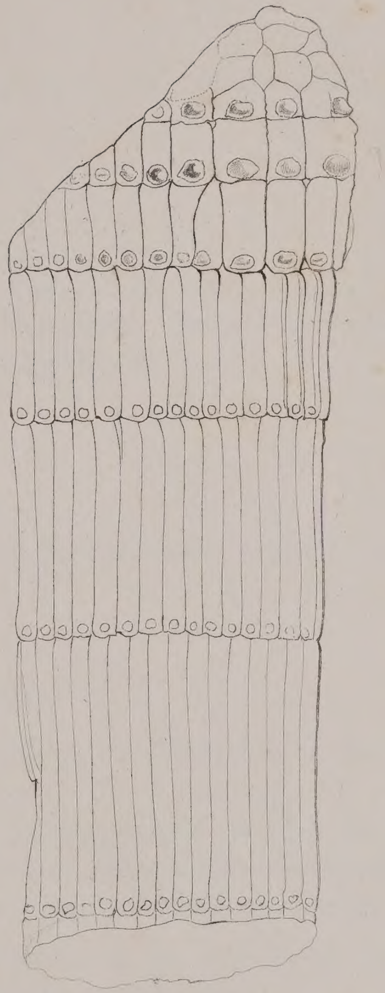
Observations.

The stem, of which two portions are figured, was about eleven feet in length.

The first figure represents a portion of the upper part of the stem, with the scales attached; the second a portion of the lower part, with so much of the scale attached as fills up the hollow, and is connected by the gland, the back of the scale having been detached by adhering to the matrix.

A shews the cicatrix with its transverse gland which connects the scale in the upper part of the trunk. At B is seen the interstice which separates the scales in the lower part of the stem. And at C is a section of the hollow cicatrix.





J. Curtis Del.

Pub. by. E. T. Artis, London. 1824.

Weddell Sc.

CALAMITES DECORATUS.

ORNAMENTED CALAMITE.

Generic Character.

Stem jointed, longitudinally striated; *impressions* at the articulations usually forming rings round the trunk.

Specific Character.

CALAMITES decoratus. *Stem* arborescent; joints short, decreasing in length towards the summit, where they form an enlarged blunt head; *striæ* tuberculated at bottom close to the articulation; those of the head very broad.

Synonyms.

Phytolithus sulcatus. American Philosophical Transactions, new ser. vol. 1, pl. 5. f. 1.

Description and Locality.

Stem jointed, sometimes three feet in length and two to four inches in diameter, terminating upwards in an enlarged blunt head.

Joints shorter than the diameter of the stem, longitudinally striated, tuberculated at the lower extremity of the striæ, close to the articulation; the joints becoming shorter, the striæ broader, and the tubercles larger towards the summit.

Found imbedded, both horizontally and upright, in the Lea-brook quarry, Yorkshire, and in many other places; as also frequently in ironstone.

Observation.

The situation of the tubercles at the lower extremity of the striæ is a striking feature of this species, and the termination is also remarkable for its obtuseness.

a/d